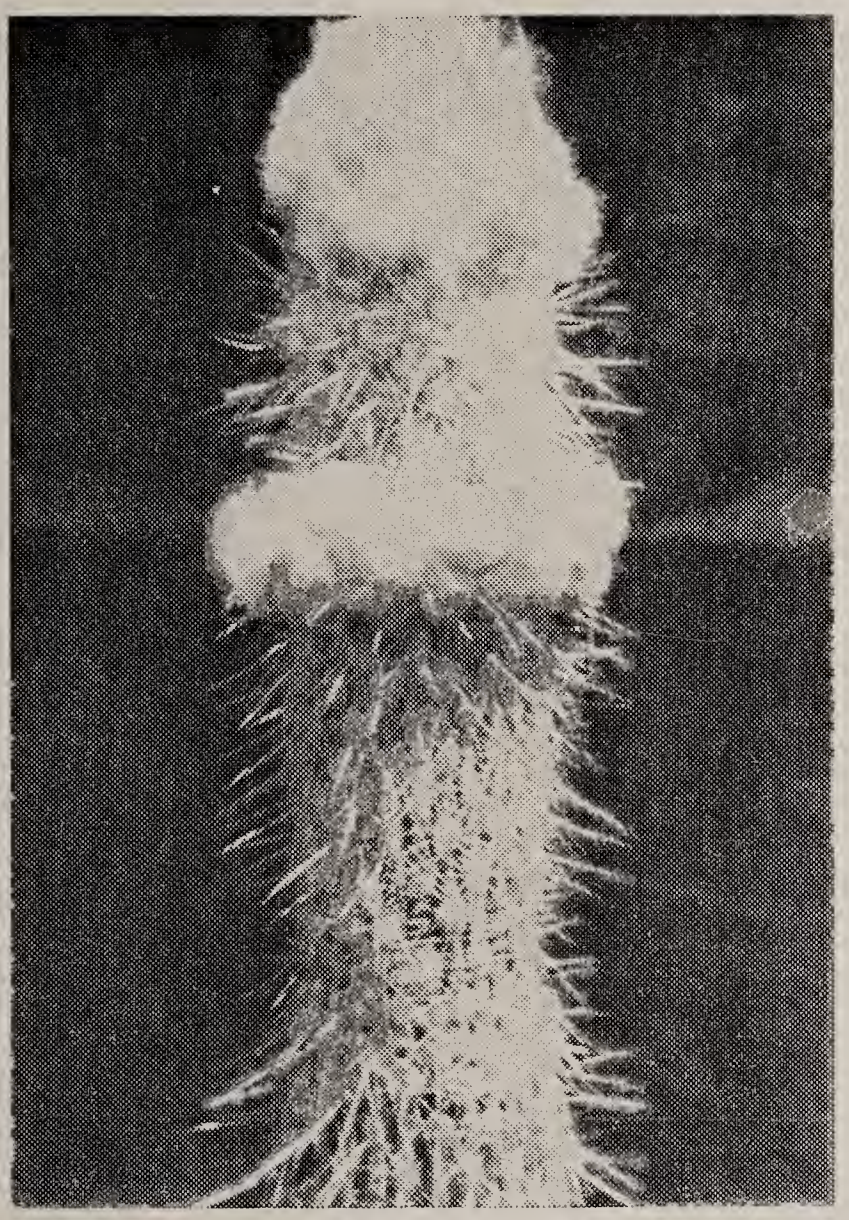
SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XV JAN., 1961 No. 1



Cephalocereus apicicephalium. An unusual slender plant found near Tehuantepec, Mexico.

REG MANNING

SAGUAROLAND BULLETIN

Published and owned by the Arizona Cactus and Native Flora Society, sponsors of the Desert Botanical Garden of Arizona, P.O. Box 547, Tempe. Saguaroland Bulletin attempts to promote the Garden and to provide information on the desert plants and their culture. Subscription $5.00 per year, the subscription including active membership in the Society and the Desert Botanical Garden. Issued 10 times a year.

W. HUBERT EARLE, Editor

Volume XV | January, 1961 | No. 1

Arizona Cactus and Native Flora Society

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Desert Botanical Garden of Arizona

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GARDEN OPEN DAILY 9 A.M.—5 P.M.
Including Week-ends and Holidays

NOTES FROM THE CORNER OF THE EDITOR'S DESK

SAGUAROLAND BULLETIN format will continue thru 1961 somewhat similar to that of 1960 except that there will be an additional monthly article by John Weber on an insect injurious to desert plants, especially cactus. An additional feature will be a 'Question and Answer' page by your editor.

The Volume and Number of each issue will also be placed on the front cover to facilitate the arranging of your copies.

We certainly appreciate the patience of our members by not complaining when the Saguaroland Bulletin does not arrive on time. The Garden's Staff has been doing a marvellous job in getting our new Visitor's Building completed, landscaping the grounds and numerous other jobs under exteremly complicated conditions.

We had planned to have everything completed by early fall but our crowds began three months earlier than anticipated with the result that we had to revamp our work schedules to take care of the early surge of visitors.

It is most gratifying to have so many visitors. Our weekly Wednesday classes in 'Identification of Desert Plants' is the largest on record and is taxing the facilities of Webster Auditorium. We could never hold such large classes if we had not moved the Book Store from the Auditorium to the new Visitor's Building. The weekly Thursday afternoon illustrated lectures are also quite crowded and we find that many persons come week after week and never miss a showing of Kodachrome slides.

MEMBERSHIPS are still on a steady increase and the Saguaroland Bulletin is now going to 632 members in 24 different foreign countries.

We certainly wish to thank our faithful members for renewing their memberships promptly each year. We, like similar membership organizations, naturally lose 30-40 members each year due to change of residence, loss of interest, financial reasons and death. Despite this loss we now have 60 more members than at the same time last year.

DONATIONS have been exceedingly gratifying the past year. Many donations were given to the Visitor's Building fund. Donations of equipment and labor were given by members and other organizations. Plants, too numerous to mention, were given by many individuals and estates.

We would like to give recognition to these parties by mentioning their names but they have, in most cases, requested to be anonymous. Our deepest thanks for their tax deductible gifts and support.

14th ANNUAL CACTUS SHOW will be held Feb. 19th-26th in the Webster Auditorium. Additional space is now available to make this a bigger show. A committee of Mrs. A. Holt, John Hales and Rod McGill will meet this month to draw up the entry classifications which will be published in the February issue. All indications point towards another successful Show. We urge all interested persons to begin sorting out your plants and getting them in shape for the show.

Awards of trophy cups for the various classifications and ribbon awards will be given to the winners.

There will be a change this year in entry dates and judging procedure. The committee hopes to be able to open the Show Sunday 9. A.M. with all judging completed, awards of cups and ribbons all in place at that time. Watch for more details in the February issue.

HYPTIS EMORYI — LABIATAE (MINT FAMILY)

DESERT—LAVENDER

Hyptis emoryi bush, 3½' tall and 4' wide growing on S/W exposure in decomposed granite.

DESCRIPTION:

Tall, slender, open shrubs having ash grey bark and grayish leaves. This lavender scented plant is the only species represented in the west and the only shrubby species of the genus found in the United States. The genus **Hyptis** is primarily of Mexican and South American origin. In size it ranges from three to six feet and may attain twelve feet under optimum conditions. The leaves are oblong-ovate with coarsely dentate or serrate margins. These are one to five cm. long and are covered with a mat of short wooly hair. Flowers are numerous and axillary, being crowded into a cylindrical spike composed of globose wooly cymules. The corolla is about four mm. long, violet in color, and the tube is cylindrical. Dense wool covers the calyx. At lower elevations the plant flowers continuously throughout the year. Seeds are quite small and are like smooth, oblong nutlets.

DISTRIBUTION:

Desert-lavender is found on alluvial plains and warm foothill slopes, in washes, ravines, canyons, and desert valleys. It grows on rocky gravelly soils ranging in elevation from sea level to five thousand feet. **Larrea** (Creosote bush), **Franseria sp.** (Burr-sage), and **Cercidium sp.** (Palo verde) are found in common association with **Hyptis.**

Distribution ranges from southern Arizona and southern California into northwestern Mexico in the state of Baja California and Sonora then south into Nayarit. Locally in Arizona it extends from Oatman in Mohave county south into Yuma and Pima counties and east into Yavapai, Maricopa, Gila, Pinal, and Graham counties.

UTILIZATION:

Hyptis may be used as a foundation shrub and would be most effective when used against a dark colored wall or

fence where its grey color would afford contrast. If planted densely enough, a screen for service areas can be created, and as for any plant in a garden it can be used singly as a specimen shrub in its own right. Adjacent to patio areas or near porches it might be used for reason of its delicate lavender scent alone.

CULTURE:

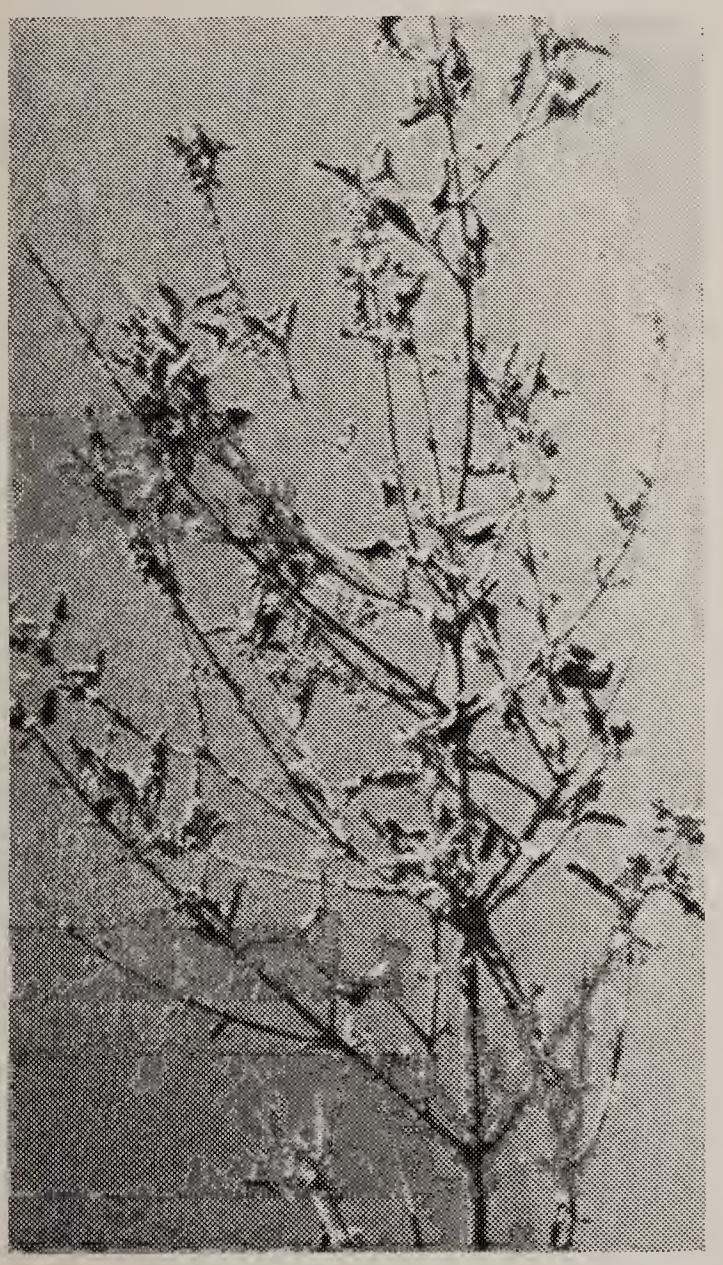
Desert-lavender requires full sun or a protected site as it is sensitive to cold. Any well drained, rocky, or gravelly soil will serve if light watering is applied during late summer months. No fertilization is required, but light nitrogen application will increase top growth.

PROPAGATION:

Seed of **Hyptis** is very small and collection entails some difficulty. There is no apparent dormancy, however, and no pretreatment is necessary prior to installation. Propagation by mature wood cuttings is achieved easily and entails less time. These cuttings when placed in loose soil in containers, given partial shade, and kept moist, soon put on shoots and establish a root system. After a year in containers they can be transplanted directly into the ground.

AVAILABILITY:

Desert-lavender is not known to be available in retail trade. Those persons wishing to acquire this plant for their garden will have to grow it from seed or cuttings.



A 4' branch of *Hyptis emoryi* showing its arrangement of open, grey branches and leaves.

Plants can be propagated from cuttings in a year.

Terminal flowers of *Hyptis emoryi* X1¼.

REMARKS:

Numerous plants in the wild state are seen to have many dead branches. This is due primarily to borer damage, but in some cases a rust fungus is the causative agent. Good cultural practices will avoid the same condition in the cultivated plant. This is considered a most valuable bee plant and it is often referred to as bee-sage.

REFERENCES:

Benson and Darrow — **The Trees and Shrubs of the Southwestern Deserts.**

Dayton, W. A. — **Important Western Browse Plants.**

Goldman, E. A. — **Biological Investigations in Mexico.**

Jaeger, E. C. — **Desert Wild Flowers.**

Kearney and Peebles—**Arizona Flora.**

Standley, P. C. — **Trees and Shrubs of Mexico.**

—John H. Weber.

MALVA
MALVA DEL CAMPO
MALVA MEXICANA
MALLOW
CHEESES
MALLOW FAMILY

Malva parviflora L.

Malvaceae

Of the mallows, Pliny said, "Whosoever shall take of the mallows shall be free from all diseases," and the famous Greek physician, Pedacius Dioscorides, who compiled one of the earliest of all herbals, highly praised the mallow for its virtues. He was said to have been the private attendant to Anthony and Cleopatra, and was greatly respected as the source of herbal therapy for sixteen centuries.

At various times, the Anglo-Saxons have used **malva** as a food, a cataplasm, and a cartharic; and because of its demulcent properties, as a relaxing poultice in cases of external inflammation.

The Spanish New Mexicans regard **malva** as a remedy for "All the ills that men endure" (Cowley). They boil its leaves and wash with the resultant tea whatever pimples from whatever disease may appear on the body; they take the decoction for fever, and consider it a valuable aid in causing perspiration during sweat baths. Headaches are cured by mashing the leaves, adding salt and vinegar, and by placing the mixture on the temples. They say mallow is an excellent emmenagogue and use it for pneumonia. The powdered dry leaves are blown into the throat and are supposed to relieve swollen glands.

In order to clean out the system after childbirth, the leaves are boiled, the liquid is strained, piloncillo (Mexican brown sugar) is added and the infusion drunk. Another more elaborate method is to boil fifteen or twenty-five green leaves, or preferably dry leaves, with one-third cup of raisins, and a cup of

Cheese Plant (*Malva parviflora*)

Flowers and flat, round fruits of *Malva parviflora.*

water, for an hour. This should be done at night and the preparation placed out-of-doors so that the dew reaches it. In the morning it is eaten by the women the first, second, and third day after childbirth.

The mallow grows where hard-pan and clay suitable for pottery-making exists, so the Indians always look for the mallows as an "indicator" of the position of the material they need for their pottery.

At Santa Clara pueblo, it is used as a remedy for headache. The ground plant is made into a paste with the addition of water and a small quantity of sugar. This is applied over each temporal artery and on the forehead between the eye-brows.

Ethnobotanical excerpt from 'Healing Herbs of the Upper Rio Grande' — L. S. M. Curtin, Laboratory of Anthropology, Santa Fe, N. M.

PLANT OF THE MONTH

Opuntia basilaris (Beaver-tail Prickly Pear) is a low growing plant with its pads arising from the base of the plant. It is found in sandy soils of the deserts bordering the Colorado River in Arizona, California and Nevada. The large, showy, light-pink to purple blossoms appear in late March and early April.

MONEILEMA GIGAS

CERAMBYCIDAE

LONGICORN BEETLE

Longicorn Beetle eating on an Argentine cereus Xl¼.

DESCRIPTION:

There are eight or more species of the genus Moneilema found in the southwest and in northern Mexico. The adult beetle is large and robust, shining black, and wingless. The common Arizona species measures up to thirty mm. in length. The antennae are always long and annulated and are situated just forward and above small finely granulated eyes. A large marginal spine is located on either side of the prothorax of most of the species.

The larvae form which is most destructive is about twelve mm. long when fully developed. The body is white with a dark brown chitonous head and is sparsely covered with brown setae. In contrast to the adult, the antennae are very small and the eyes are boscured. There are ten abdominal segments.

Moneilema undergoes a pupae state in soil at the base of the infested plant and emerges as an adult beetle the following spring.

DISTRIBUTION:

Longicorn beetles are found in Texas, Arizona, Kansas, northern Mexico, and Baja California.

Side view of a Longicorn Beetle X¾.

DAMAGE:

Plants known to have been infested are Opuntia sp., both prickley pear and cholla, Carnegiea gigantea, and in cultivated gardens species of Trichocereus Echinopsis, Lobivia, and Rebutia. Most damage occurs to the roots and stems of plants. Adult beetles gnaw the edges of new joints of Opuntia and the growing tips of other species. The interior mainstem and older joints are eaten out by the larvae and this damaged portion becomes black with black sap exuded to the surface. Activity in one stage or another is present throughout the year.

CONTROL:

Burning of trash and infested portions of plants aids in reducing overall numbers of insects. Being wingless and most active nocturnally, hand picking is effective where feeding activity has been noted by daylight. Poisoning offers the best hope for complete control. Arsenate of lead dusted on the plants or around the base of plants will destroy the adult beetle. Dieldrin, a turf insecticide may prove effective to all stages and is not as dangerous to handle.

REFERENCES:

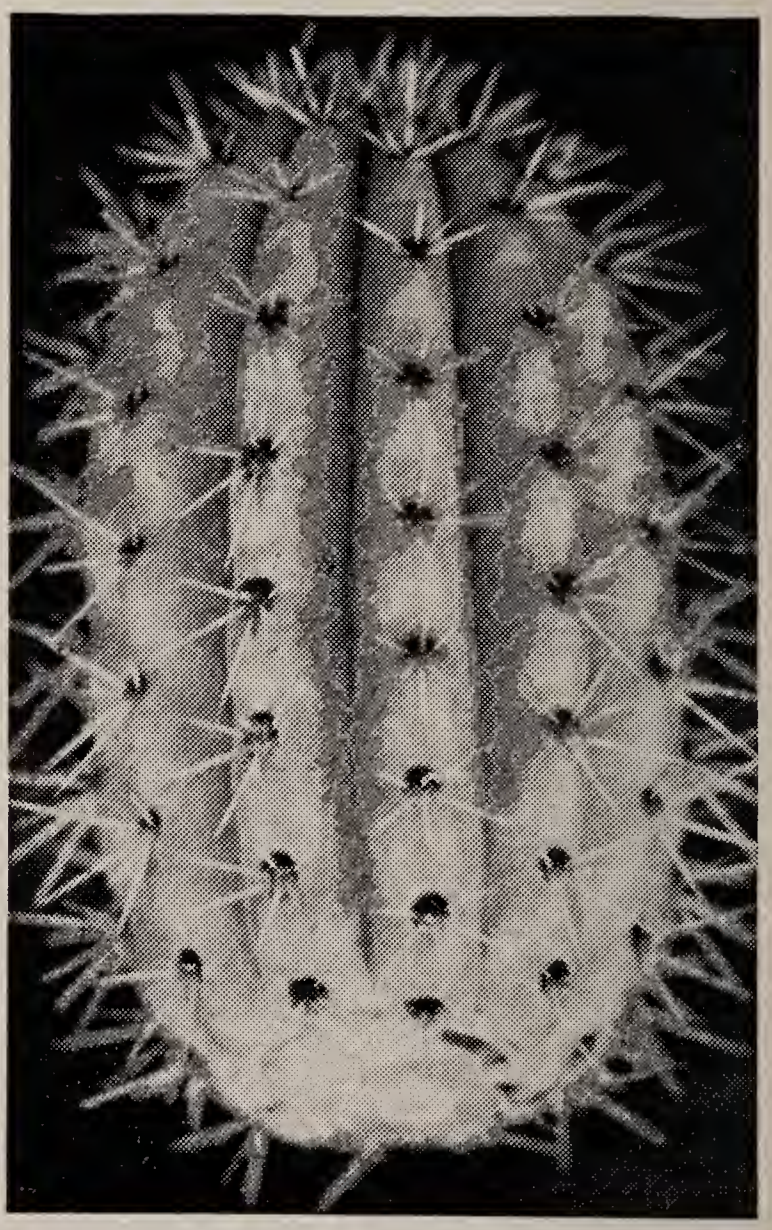
LeConte and Horn — **Classification of the Coleoptera of North America.**

Hunter, Pratt, and Mitchel — **The Principal Cactus Insects of the United States.**

—John N. Weber.

QUESTIONS AND ANSWERS

QUESTION: "How often should I water my cactus cuttings that have just been removed from large plants?"



ANSWER: Forget about the watering for some time and do the following:-

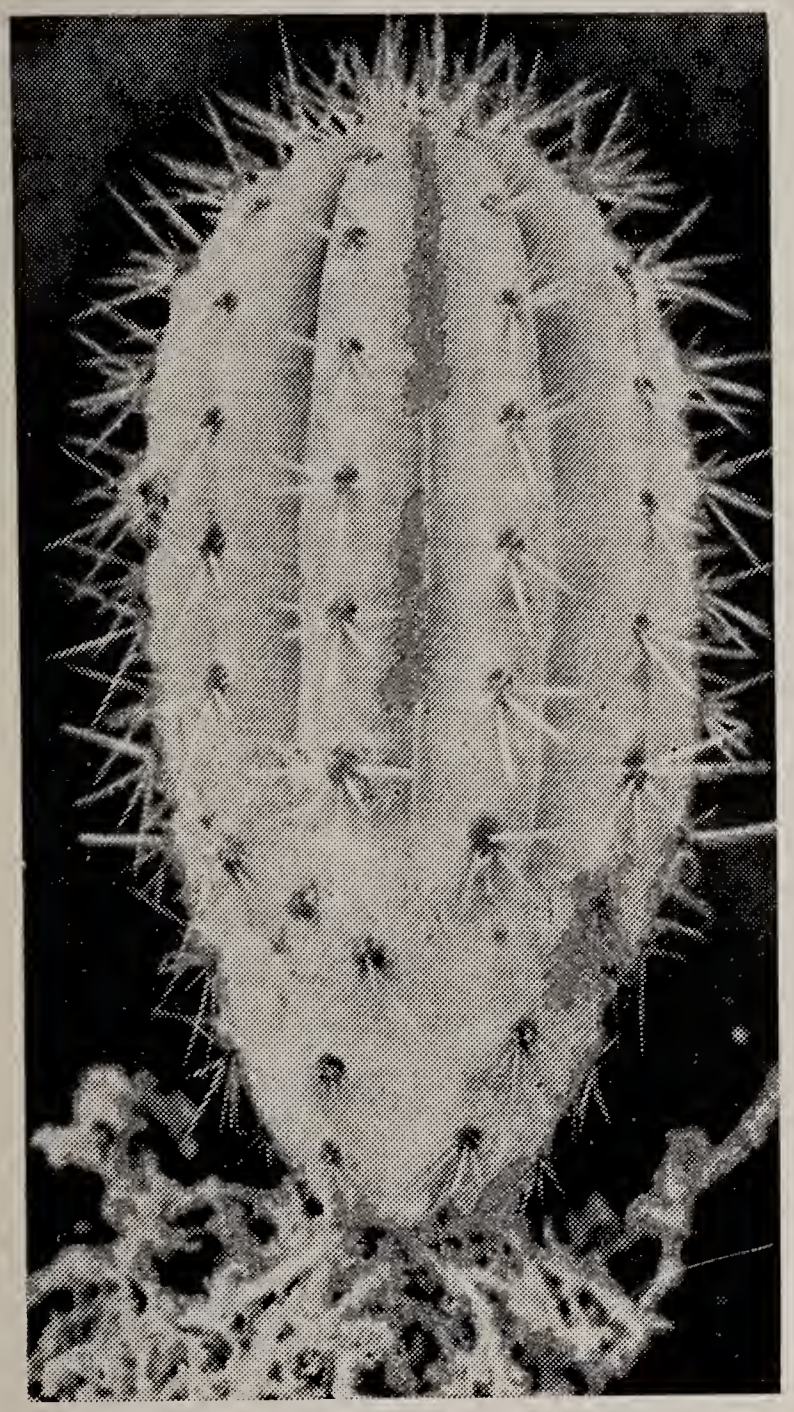
1st—Lay the cuttings in a shaded area so that the cut portion heals properly and develops a good hard callous. This may take one to four weeks depending upon the species and the weather.

2nd—Plant the cutting in dry sand. Support it with a stick if it is quite tall and keep dry.

3rd—Gently remove the cutting from the sand in one to two weeks to inspect for new emerging roots. If none have as yet appeared, replant in sand and inspect in another week or so.

4th—If roots are showing, then plant cutting in a good soil. Soak weekly thru the warm months. Stop watering when the nights become cold so that the plant can dehydrate and is then able to withstand cold and freezing weather.

The use of cuttings is one manner in which you can produce large plants



Lemaireocereus thurberi offset-cutting showing root development in one year.

On opposite page is view of a *Lemaireocereus thurberi* cutting, calloused and ready to be planted in sand.

and blossoms in a few years. If you are using cuttings in desert plantings in the Southwest you should protect them with a 2' high, 1" mesh poultry wire to discourage rodents and rabbits from feasting on them. During dry periods when the desert is dry the rabbits will seek out your cactus as does a cat for catnip.

* * *

QUESTION: "My cactus plants are larger and greener than my neighbor's but they never bloom. Are they all male plants?"

ANSWER: No! Cactus blossoms are usually bisexual in that each blossom is perfect, i.e. having the stamins (male) and pistils (female) in the same blossom.

Your problem is possibly too much water and continuous watering throughout the whole year. This causes the plants to grow quite plump and they are then not interested in blooming.

Do not water your plants from the middle of November to the last of February, then water lightly until warm weather. During the hot summer months they can be watered heavily once a week.

The period in which the plants do not get water causes them to hibernate. This causes the plants to dehydrate slightly and 'set' flower buds. These buds will then swell-up and flower during the warm spring or early summer.

One of the hardest chores in raising cactus is not to water them as often as you water leafy plants. Just remember that 'more cactus are lost thru kindness than by carelessness'. If you cannot resist watering your plants thru the winter then hide them in the basement until spring — out of sight, out of mind.

CALENDAR OF EVENTS

JANUARY

Jan. 3—Cactomaniacs Club.....8 P.M.
Jan. 4—Class—Deserts and their plants.....3 P.M.
Jan. 5—Illustrated Lecture—Arizona Wildflowers.....3 P.M.
Jan. 11—Class—Desert Plants and their culture.....3 P.M.
Jan. 12—Illustrated Lecture—Ariz. Trees & Shrubs in Bloom.....3 P.M.
Jan. 18—Class—Desert Succulent Plants.....3 P.M.
Jan. 19—Illustrated Lecture—Ariz. Birds & Reptiles.....3 P.M.
Jan. 25—Class—Identification of Desert Plants.....3 P.M.
Jan. 26—Illustrated Lecture—Desert Succulent Plants.....3 P.M.

FEBRUARY

Feb. 1—Class—Desert Survival Plants.....3 P.M.
Feb. 2—Illustrated Lecture—Collecting Plants in Mexico.....3 P.M.
Feb. 7—Cactomaniacs Club.....8 P.M.
Feb. 8—Class all-day Desert Field Trip.....9:30 A.M.
Feb. 9—Illustrated Lecture—Ariz. Cacti in Bloom.....3 P.M.
Feb. 19—14th Annual Cactus Show.....9 A.M. to 5 P.M.

YOU LIKE THE DESERT?

Is the caption of a brochure that is inserted in this month's Bulletin. This brochure was written in 1958 by Mel Hinman and the drawing by Reg Manning, both Board members. This year a map-drawing was donated by Reg Manning and a cut was made for the back of the brochure to guide persons to the Garden.

20,000 of these brochures are printed each year and are given to Automobile Clubs, Travel Agencies, Chambers of Commerce, Hotels, Motels, etc. We feel that our increased attendance in the past three years can be attributed to a great extent to these brochures.

If you would like to have any extra copies, or know of persons or organizations who could use them, please let us know and we will be glad to mail them out at once.

You LIKE the Desert?

Do you want to see All of it in one trip?

Here in Phoenix is the Number One Desert Botanical Garden in the WORLD devoted only to desert plants from the world's deserts. YOU can see it today between 9 A.M. and 5 P.M.

Thousands of species of cacti and desert plant life grow right here. Visitors are welcome, admission is FREE. 135,000 saw it last year. The Desert Botanical Garden of Arizona is supported entirely by private membership.

See how nature adapts plant life to an existence where there is very little water. Some plants look like rocks, and require close inspection to find them. Many other oddities peculiar to the desert are well worth the short trip to see them. See how cacti store moisture to carry them through dry times.

Conduct your own tour — follow the walks — identify the various types by the little brochure you receive for 10c at the Visitors Bldg. The most entertaining, most reasonable and certainly the most enjoyable time you have spent in the sunshine learning about the desert.

You are in Arizona's Valley of the Sun, a veritable oasis in the desert. We hope you like our desert country. We hope you see all of it! DO come visit us

DESERT BOTANICAL GARDEN OF ARIZONA

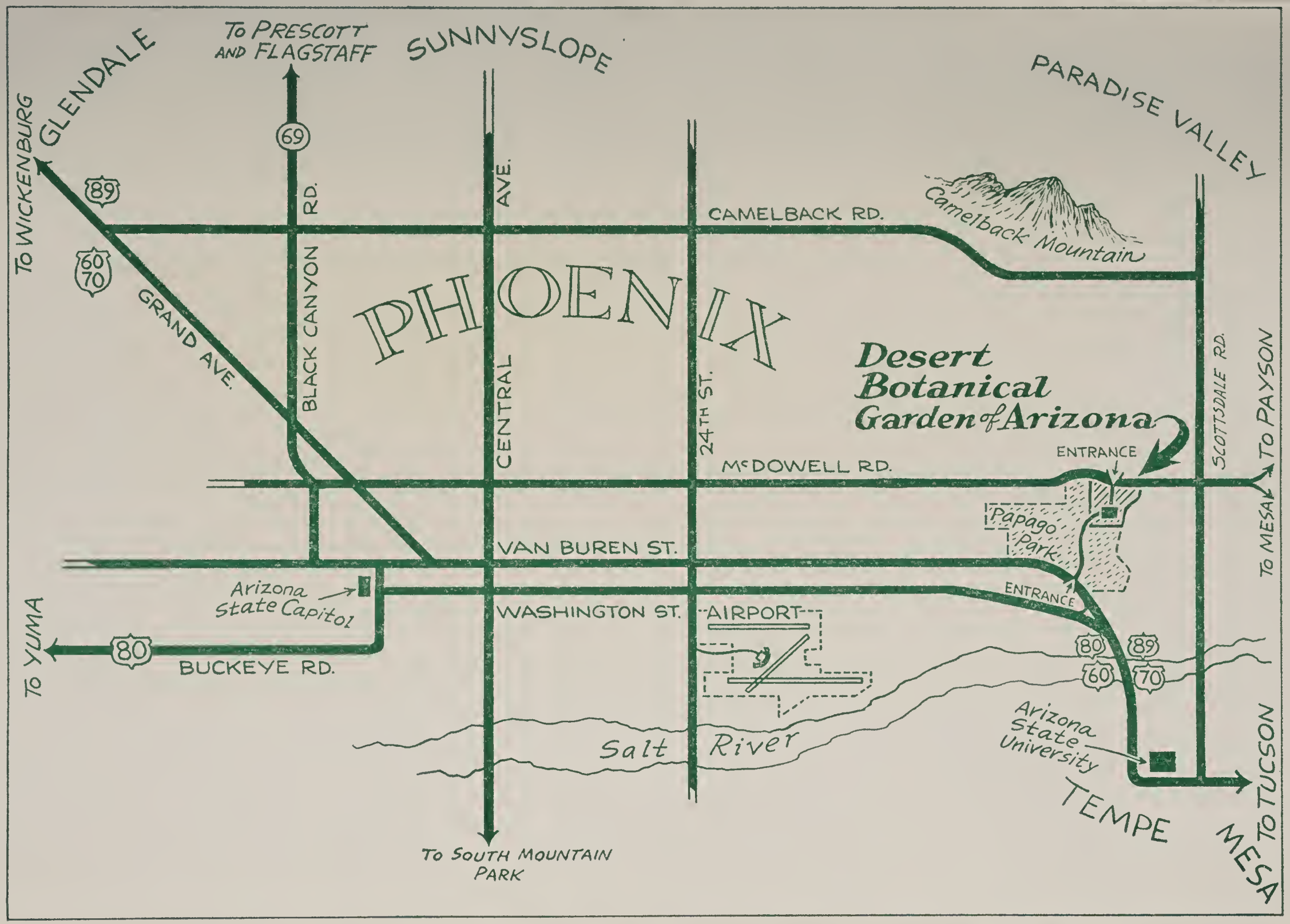
In PAPAGO PARK, east of PHOENIX

Between 6300 E. Van Buren (Hwys. 60-70-80-89)
and 6400 E. McDowell Rd.

Open Daily including Holidays — 9 A.M. - 5 P.M.

(Turn over for directional map.)

1/61


To Prescott and Flagstaff
Sunnyslope
Paradise Valley
To Wickenburg
Glendale
69
89
60
70
Grand Ave.
Black Canyon Rd.
Central Ave.
24th St.
Camelback Rd.
Camelback Mountain
PHOENIX
Desert Botanical Garden of Arizona
Entrance
McDowell Rd.
Scottsdale Rd.
To Payson
To Mesa
Papago Park
Entrance
Van Buren St.
Arizona State Capitol
Washington St.
Airport
To Yuma
80
Buckeye Rd.
Salt River
Arizona State University
Tempe
To Tucson
To South Mountain Park

SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XV FEBRUARY 1961 No. 2

Centerpiece of Succulents
Mrs. E. S. Tanner — 1960 Show

REG MANNING

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Including Week-ends and Holidays

CACTUS SHOW

The 14th Annual Cactus Show, co-sponsored by the Phoenix-Gazette and the Desert Botanical Garden, will be held February 14th to the 26th, 9 A.M. - 5 P.M., in the Webster Auditorium.

Potted Cactus plants, Succulent plants, Desert Trees and Shrubs, Dish gardens, Arrangements, Corsages, Button Gardens, Miniature arrangements, Strawberry jars, Black & White Photographs, Oil & Water paintings, Use of Desert Woods & Educational exhibits will comprise the 14th Annual Show.

All persons interested in exhibiting in any of the above classifications are welcome to make entries. As in the past, there is no entry fee charge.

Display space will be increased one-third since the Bookstore has been moved to the new Visitor's Building and the Webster Auditorium will be used entirely for the Show.

The classification committee of Mrs. A. Holt, John Hales and Rod McGill met last month and made several needed changes in the various Sections, Classes and Divisions. The list is in the center of this Bulletin and may be 'lifted' for the checking-off of your entries. Extra copies of this list are also available at the Garden's office. Several new Classes and Divisions have been added making this list the the largest entry list for several years.

Entries can be placed in the Show from Friday 9 A.M., Feb. 17th until 6 P.M. Saturday. Judging will be made Saturday evening Feb. 18th.

The Show will then be opened to the public Sunday Feb. 19th at 9 A.M. with the awards of trophies and ribbons in place. We hope that this departure, from the past years, will meet with your approval. It has always been hard to complete the judging and open the Show by Sunday noon and it has not been fair to make the many Sunday morning visitors wait so long to see the results of the judging and the fine displays.

Awards will consist of three large trophies for the most points gained in either of the three largest Sections. Twelve small trophies will be awarded to the outstanding exhibits in twelve divisions. Ribbons will be awarded for 1st, 2nd and 3rd places in each division.

The Show cannot be a success unless we have volunteers from our membership who will help at the Bookstore, act as hosts and hostesses, guide traffic, issue pamphlets, protect the plants and many other duties. If you can help for a few hours, a day or several days please phone the Garden and let us know when you can volunteer your time. Last year, 35 members thoroughly enjoyed themselves helping to make the Show run smoothly for the 11,000 visitors who viewed the Garden and the fine Show exhibits.

This year we are honored to have the Governor of Arizona, Paul Fannin, dedicate our new Visitor's Reception Building Monday, 3 P.M. Feb. 20th. We urge you to attend this dedication of a building which you helped to build.

The Arizona Flora Section and a Memorial Bench will be dedicated Thursday, 3 P.M. Feb. 23rd. New, wide, rocked paths lead up alongside the mountain and aford a good view of the Garden showing its many improvements during the last decade. Be sure and attend.

PLANT OF THE MONTH

Star Cactus (Astrophytum ornatum) is an interesting plant whose body cross-section resembles a star. It was found in Mexico in the early 1800's and grows in the states of Hildago & Queretaro. Four other species are included in this genera. Many new species have been 'set-up' but are merely varietal forms. These plants produce an abundance of large blossoms thru the spring and summer.

FOURTEENTH ANNUAL

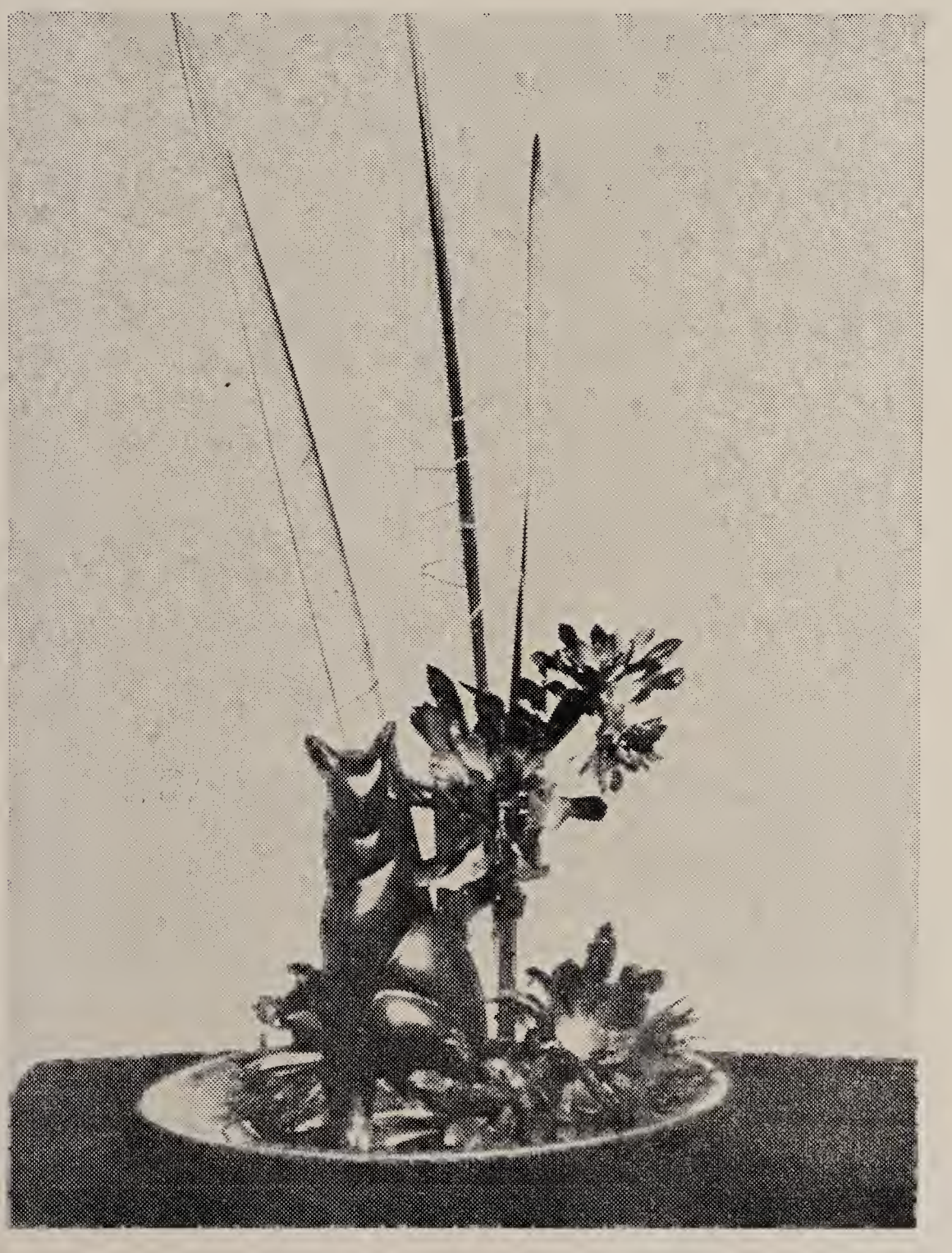
CACTUS SHOW

February 19th to February 26th 1961

Sponsored by the Phoenix Gazette and the Desert Botanical Garden

Papago Park,
Phoenix, Ariz.

SHOW OPEN DAILY 9 A.M. TO 5 P.M. — ADMISSION FREE



Centerpiece arrangement of Succulents
Mrs. E. Speck — 1960 Show

SECTION I **CACTI**

Class A. **POTTED PLANTS**

Div. 1. OPUNTIA
2. CEREUS
3. ECHINOCEREUS
4. REBUTIA
5. CHAMAECEREUS
6. LOBIVIA
7. ECHINOPSIS
8. ARIOCARPUS
9. STENOCACTUS
10. FEROCACTUS
11. ECHINOCACTUS
12. GYMNOCALYCIUM
13. ASTROPHYTUM
14. THELOCACTUS
15. ECHINOMASTUS
16. CORYPHANTHA
17. MAMMILLARIA
18. EPIPHYLLUM
19. ANY OTHER SPECIES

Class B. **CRESTED PLANTS**

Div. 1. Crested Cacti — own root
2. Crested Cacti — grafted

SECTION II **SUCCULENTS OTHER THAN CACTI**

Class A. **POTTED PLANTS**

Div. 1 AEONIUM
2. AGAVE
3. ALOE
4. BRYOPHYLLUM
5. CRASSULA
6. DUDLYEA
7. ECHEVERIA
8. EUPHORBIA
9. GASTERIA

10. HAWORTHIA
11. KALANCHOE
12. LITHOPS
13. MESEMBRYANTHEMUM
14. PLIEOSPILOS
15. SEDUM
16. STAPELIA
17. YUCCA
18. ANY OTHER SPECIES

SECTION III **DESERT TREES & SHRUBS**

Class A. **POTTED PLANTS**

Div. 1. TREES
2. SHRUBS
3. ANY OTHER DESERT PLANTS

SECTION IV **ARRANGEMENTS**

Class A. **DISH GARDENS** (Planted Accessories permitted)

Div. 1. CACTI
2. OTHER SUCCULENTS
3. CACTI & OTHER SUCCULENTS

Class B. **CENTERPIECES** (Accessories permitted)

Div. 1. CACTI
2. OTHER SUCCULENTS
3. CACTI & OTHER SUCCULENTS
4. NATURAL, DRIED DESERT MATERIAL
5. MEXICAN INDIAN INFLUENCE
6. AMERICAN INDIAN INFLUENCE
7. ANY OTHER CENTERPIECE

Class C. **ARRANGEMENTS ON/or AGAINST THE WALL** — (Accessories Permitted)

Div. 1. CACTI
2. OTHER SUCCULENTS
3. CACTI & OTHER SUCCULENTS
4. NATURAL, DRIED DESERT MATERIAL
5. MEXICAN INDIAN INFLUENCE
6. AMERICAN INDIAN INFLUENCE

7. ANY OTHER ARRANGEMENT

Class D. **CORSAGES**

Div. 1. SUCCULENTS

2. DRIED DESERT MATERIALS

Class E. **BUTTON GARDENS**

Class F. **MINIATURE ARRANGEMENTS**

Div. 1. UNDER 5″

2. 5″ TO 8″

G. **STRAWBERRY JARS**

SECTION V **ARTS — DESERT SUBJECTS**

Class A. **BLACK & WHITE PHOTOGRAPHS**

Class B. **OIL PAINTINGS**

Class C. **WATER COLOR PAINTINGS**

Class D. **ANY OTHER MEDIUMS**

Class E. **DESERT WOODS**

SECTION VI **EDUCATIONAL EXHIBITS**

SECTION VII **OPEN — NON-COMPETITIVE**

The 14th Annual Cactus Show is open to all persons interested in desert plants and who would wish to exhibit some of their plants in the various classifications. No entry fee is charged.

Awards of three large trophies will be made to those accumulating the most points in the first three sections. Twelve smaller trophies will be awarded for outstanding exhibits in twelve divisions. Ribbons will be awarded for 1st, 2nd and 3rd places in each division.

Entries can be placed in the Auditorium from 9 A.M. Friday, Feb. 17th until 6 P.M. Sat., Feb. 18th.

Judging will be held Saturday, Feb. 18th from 7 to 9 P.M.

The Show will open to the public Sunday, Feb. 19th at 9 A.M. with all awards and ribbons in place.

Entries can be removed from the Show after 5 P.M. Sunday, 26th, or the following Monday.

For any additional information please phone the Desert Botanical Garden, BR 5-5592.

DACTYLOPIUS

Family (COCCIDAE)

COCHINEAL SCALE

DESCRIPTION:

Dactylopius is a scale insect that is covered by a thick white mass of a cottony like wax secretion. The adult female scale is crimson red, containing within itself a large quantity of red body fluid. It is oval in shape and from three to five mm. in length. The antennae and legs are small and slender; the antennae having seven segments. The male scale is enclosed in a white cocoon, oblong in shape, and six mm. long. This snowy white cocoon is enclosed in the cottony mass with several female scales. Eggs are laid during the winter to hatch in the spring. There is one brood each year.

DISTRIBUTION:

The California cochineal scale is found in the arid south-west extending into Baja California of Mexico. It ranges in the states of California, Arizona, New Mexico, Colorado, Montana, Florida, and on the island of Cuba.

DAMAGE:

Dactylopius sp. infests species of **Nopalea, Echinocactus,** and **Opuntia;** both prickly pear and cholla. Several native prickly pears and **Opuntia leptocaulis** serve as host plants for the insect. Damage consists of small plants being greatly stunted or disfigured. Heavy infestations causes mature plants to turn yellow and become sickly, eventually resulting in complete loss.

CONTROL:

Biological as well as chemical control can be utilized. Biological control makes use of a natural predators to destroy the scale. A number of ladybird beetles in both larval and adult form feed on cochineal scale. Commercial collectors provide beetles for this purpose. Chemical control makes use of carbolic acid emulsion for dipping entire plants or oil emulsion sprays to cover large plants. Oil sprays should not be used during periods of high temperatures due to danger of burning epidermal tissue.

Cochineal scale on cholla branch. Note pencil for size comparison.

REFERENCES:

Essig, E. O.—**Insects of Western North America.**

Essig, E. O.—**Injurious and Beneficial Insects of Calif.**

Merrill & Chaffin—**Quarterly Bulletin of State Plant Board of Florida. Vol. VII No. 4, July, 1923.**

— John H. Weber

RHUS OVATA ANACARDIACEAE (Cashew Family)

ARIZONA MOUNTAIN LAUREL

SUGAR-SUMAC

Rhus ovata bush 7' tall and 9' wide

DESCRIPTION:

An evergreen tall shrub or small tree growing to fifteen feet in height. This broadleaf tree has a rounded crown which often reaches from base level. A shaggy trunk is covered with rough, very scaly, grey-brown bark. The interior wood is light brown. In shape, the leaves are broadly ovate, rounded at the base, and acute at the tip. The color is shiny bright-green above and dull below. There is an alternate arrangement along the stem, each leaf being short stalked and curved upward at the midrib. The margin is entire or rarely toothed and the texture leathery and glabrous. Length of leaf is from five to seven and a half cm. Small cream colored flowers occur in fifteen mm. long dense spikes or terminal panicles. Flowers open from deep red buds in March and April and occasionally again in autumn months. Fruit consists of ovate, flattened, one-seeded drupes which are about seven mm. long and covered by a glandular pubescence. These are dark red and have a pleasantly acid thin flesh. Fruit ripens in August and contains a single bony seed.

DISTRIBUTION:

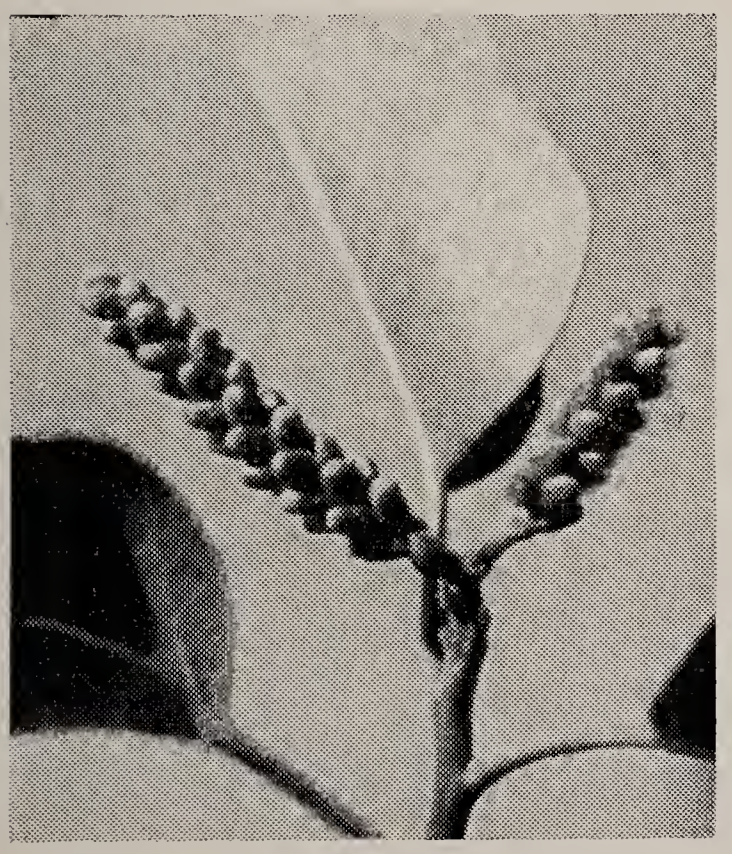
Sugar-sumac ranges from central Arizona to southern California and into the northern area of Baja California of Mexico. In California the plant extends from Santa Barbara to San Diego and from near the coast east to the desert slopes. Distribution in Arizona ranges from central Mohave and southern Coconino counties south and east into Yavapai, Maricopa, Gila, and western Graham counties. The elevation range extends from three to five thousand feet .**Rhus ovata** is found growing on slopes, mesas, dry hills, and in Arizona mainly on north slopes and in canyons. Plants in common association with sugar sumac are **Rhamnus crocea** (Buckthorn), **Cercocarpus sp.** (Mtn. Mahogany), **Quercus turbinella**

Branch of *Rhus ovata* in bloom

(Shrub live oak), and **Garrya sp.** (Silk-tassel). Soil type on which Mtn. Laurel is found growing is comprised of rocky or coarse decomposed soils often of granitic origin.

UTILIZATION:

Rhus ovata has many uses in land scaping a desert garden and is attractive throughout the year. The plant is adaptable to trimming making an excellent hedge or espalier plant. It can also be used as a roadside tree, for screening purposes, for ground or bank cover, and individually as a specimen or background plant. The dark shiny green foliage is very attractive when used with cut flowers in much the same way as lemon-leaf or cocculus is used. Prior to flowering it is particularly showy with carmine red buds terminating the leafy branches.



Close-up of *Rhus ovata* blossom

CULTURE:

Rhus ovata makes optimum growth on a full sun exposure and a very well drained soil. The plant is intolerant to excessive water during summer months, but is capable of withstanding wind or salt spray. Spatial dequirements are considerable; plants with twenty foot diameters not being uncommon under field conditions.

PROPAGATION:

The seed of sugar sumac is not subject to embryonic dormancy, but it does have an impermeable seed coat. Pretreatment consists of soaking the seed in sulphuric acid for one to six hours,

Flat, round hairy *Rhus ovata* fruit.

soaking in hot water, or exposing seed to 180-200°F. After collection, the seed should be checked for infestation by chalcid fly larvae and then planted while fresh. Plants should be transferred to containers as soon as possible to prevent seedlings from becoming pot bound. Growth rate is slow.

AVAILABILITY:

Rhus ovata can be obtained as container stock from some of the California nurseries.

REMARKS:

Sugar-sumac has been utilized for erosion control and it recovers well after groundfires. Livestock and wildlife apparently do not browse the plant to any extent.

REFERENCES:

Bailey, L. H.—The Standard Cyclopedia of Horticulture.
Goldman, E. A.—Biological Investigations in Mexico.
Kearney & Peebles—Arizona Flora.
Little, E. L.—Southwestern Trees.
U.S.D.A. Miscel. Pub. No. 654—Woody Plant Seed Manual

— John H. Weber

CALENDAR OF EVENTS

FEBRUARY

1st 3 P.M.—Class—Desert Survival Plants.
2nd 3 P.M.—Lecture—Collecting Plants in Mexico.
7th 8 P.M.—CACTOMANIACS Club.
8th 9:30 A.M.—Class—All-day Field Trip.
9th 3 P.M.—Lecture—Arizona Cacti in Bloom.
19-26th 9 A.M.to 5 P.M.—14th Annual Cactus Show.
20th 3 P.M.—Dedication of Visitor's Reception Building by The Governor of Arizona, The Honorable Paul Fannin.
23rd 3 P.M.—Dedication of Arizona Flora Section.

MARCH

2nd 3 P.M.—Lecture—Arizona Wildflowers in Bloom.
7th 8 P.M.—CACTOMANIACS Club.
8th 3 P.M.—Class—Deserts how formed and their plants.
9th 3 P.M.—Lecture—Arizona Trees and Shrubs.
15th 3 P.M.—Class—Culture of Desert Plants.
16th 3 P.M.—Lecture—Arizona Birds, Animals, etc.
22nd 3 P.M.—Class—Desert Succulent Plants.
23rd 3 P.M. Lecture—Succulents other than Cacti.
29th 3 P.M.—Class—Identification of Trees and Shrubs.
30th 3 P.M.—Lecture—Collecting Plants in Mexico.

SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XV MARCH, 1961 No. 3

Best Cactus in the Show, a 10" many headed *Ariocarpus fissuratus* as exhibited by Rod McGill.

REG MANNING

SAGUAROLAND BULLETIN

Published and owned by the Arizona Cactus and Native Flora Society, sponsors of the Desert Botanical Garden of Arizona, P.O. Box 547, Tempe. Saguaroland Bulletin attempts to promote the Garden and to provide information on the desert plants and their culture. Subscription $5.00 per year, the subscription including active membership in the Society and the Desert Botanical Garden. Issued 10 times a year.

W. HUBERT EARLE, Editor

Volume XV March, 1961 No. 3

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Desert Botanical Garden of Arizona

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Student Horticulturist ... John R. Earle

GARDEN OPEN DAILY 9 A.M.—5 P.M.
Including Week-ends and Holidays

REPORT OF 14th. ANNUAL CACTUS SHOW

We have looked forward, for many years, to the time when we would have use of all of the Webster Auditorium for our annual Cactus Shows and thought that the 30' x 60' room would be ample to take care of all future exhibits but, behold, the 14th Annual Show was held with very little space left for aisles. Fifty-four exhibitors displayed over 550 entries. An all-time record for our shows.

Rod McGill, Glendale, Ariz. dominated the specimen Cacti and Succulent classifications and was followed by Alan Blackburn, Tucson and J. Owen Stradling, Mesa, a new-comer in the competitive field, Mrs. Monnie Speck swept the Arrangements section.

The Phoenix Gazette, co-sponsors of the Show, gave us a fine, well-timed publicity that drew the largest crowds in the history of the Garden. Opening day found the new and the old parking lots overflowing. Visitors continually commented to our members on the cleanliness of the Garden and the wonderful plants and arrangements that were on display.

The judges, Mrs. C. Fuhrer, Mrs. A. F. Browne, Miss Betty Schmiek, Whitman Evans and Charles Conley completed a fine job of judging the many entries by 10 P.M. The clerks, Mrs. Isabelle Holt, John B. Hales Warren Dodd and Mr. and Mrs. R. McGill worked for days preparing the show and had all the awards and ribbons placed by midnight. The Show opened promptly at 9 A.M. Sunday to an expectant crowd of visitors and exhibitors.

The Show progressed smoothly due to the fine help of 67 volunteers over the eight days of the Show. Twenty-eight were on duty on opening day. It is interesting to note that several of our members cautiously volunteered a day last year but were anxious to spend several days with us this year. Our volunteers "sell" the Garden to our many visitors, have an enjoyable time and partake of Mrs. Earle's fine lunches.

Our Staff wishes to extend thanks to all of the following volunteers who helped make our jobs increasingly easier each year:- Mr. and Mrs. Hiram Pratt, Mr. and Mrs. W. G. Cook, Mr. and Mrs. Otto Freidrichs, Mr. and Mrs. Clarence Fuhrer, Mr. and Mrs. C. W. Pichelmeyer, Mr. and Mrs. Rod McGill, Mr. and Mrs. Paul Becker, Mr. and Mrs. Ed Speck, Mr. and Mrs. F. C. Dickinson, Mr. and Mrs. Paul Willemsen, Mr. and Mrs. Dugan Lewis, Mr. and Mrs. D. McDougall, Mr. and Mrs. George Lamb, Mr. and Mrs. Lake S. Gill, Mr. and Mrs. Nathan Crane, Mr. and Mrs. J. Owen Stradling, Mr. and Mrs. A. Paul Newman, Mr. and Mrs. Austin Fort, Mr. and Mrs. Bill Baldwin, Mrs. Una Miller, Mrs. Felix McWhirter, Mrs. Wm. Clore, Mrs. Ruth E. Garland, Mrs. S. Macri, Mrs. Chas. Mieg, Mrs. J. R. Osgood, Mrs Clifford Schreuder, Mrs. J. J. Taylor, Miss Faith Carl, Miss Edith Lyle, Miss Laura Lyle, Miss Alice Mathews, Mr. L. S. Wakefield, Mr. S. M. Dohanian, Mr. John N. Terziev, Mr. Don Bauer and Dr. Alice Paulsen, Mr. and Mrs. Kenneth S. Bubb, Mr. and Mrs. Warren Dodd and Mr. John B. Wells.

Outstanding displays were those of Sandyland Cactus Garden, an educational exhibit of the use of Agave sisalana by John Hales; an exhibit by the newly formed Tucson Cactus Club; excellent black and white photographs; oil and water color paintings of desert scenes.

Again, we extend our thanks to the exhibitors, volunteers and all those who helped make our Show a decided success.

WINNERS IN 14th ANNUAL CACTUS SHOW

Sweepstakes—Potted Cactus Plants—Rod McGill, R# 1, Glendale, Ariz.

Sweepstakes — Potted Succulent Plants—Rod McGill, R# 1, Glendale, Ariz.

Sweepstakes—Arrangements — Mrs. Monnie Speck, 3926 S. 3rd St., Phoenix.

Trophy Winners

Best Cactus Plant—Alan Blackburn, R# 9, Tucson.

Best Succulent Plant—Rod McGill.

Best Haworthia—J. Owen Stradling, 126 S. Drew, Mesa.

Best Dish Garden—Mrs. Richard Williams, 1429 E. Brill, Phoenix.

Best Centerpiece—Mrs. R. I. Turner, 324 W. Siesta Way, Phoenix.

Best Strawberry Jar—John B. Hales, 822 N. 7th St., Phoenix.

Best Arrangements against wall — Mrs. Monnie Speck.

Best Educational exhibit — John B. Hales.

Best Black and White Photograph — Hobart Pribbenow, 3405 E. Sheridan, Phoenix.

Best Painting—Isabelle Holt — 4648 E. Palm Lane, Phoenix.

Best Open (Non-competitive) — Sandyland Cactus Nursery, Phoenix.

Best Club Exhibit—Tucson Cactus Club.

Ribbon Awards

Opuntias

1, 2 & 3: Rod McGill.

Cereus

1: Rod McGill, 2: Rod McGill, 3: Isabelle Holt.

Echinocereus

1 & 2: Rod McGill, 3: Alan Blackburn.

Rebutia

1, 2 & 3: Rod McGill.

Chamaecereus

1 & 2: Rod McGill, 3: C. C. Pidgeon.

Lobivia

1: Rod McGill.

Echinopsis

1: C. C. Pidgeon, 2 & 3: Rod McGill.

Ariocarpus

1: Alan Blackburn, 2: Faith M. Carl, 3: Rod McGill.

Stenocactus

1: J. B. Hales, 2 & 3: Rod McGill.

Echinocactus

1 & 3; Rod McGill, 2: J. B. Hales.

Gymnocalycium

1, 2 & 3: Rod McGill.

Astrophytum

1: Faith M. Carl, 2 & 3: Rod McGill.

Theolocactus

1: Rod McGill, 2: Alan Blackburn, 3: 3: J. B. Hales.

Echinomastus

1: Alan Blackburn, 2 & 3: Rod McGill.

Coryphantha

1 & 2: Rod McGill, 3: J. B. Hales.

Mammillaria

Special & 1: Rod McGill, 2: Alan Blackburn, 3: H. J. Bool.

Epiphyllum

1: Rod McGill.

Any other species

1: Alan Blackburn, 2 & 3: Rod McGill.

Cactus Seedlings

1: Mrs. Paul Willemsen, 2 & 3: Bill Thornton, Tucson.

Aeonium

1 & 2: Mrs. N. M. Blomquist, 3: Isabelle Holt.

Agave

1, 2 & 3: Rod McGill.

Aloe

1, 2 & 3: Rod McGill.

Bryophyllum

1, 2 & 3: Rod McGill.

Crassula

1: Rod McGill, 2: J. Owen Stradling, 3: Mrs. S. R. Stevens.

Dudleya

Special, 1 & 2: Rod McGill, 3: Isabelle Holt.

Echeveria

1 & 3: Rod McGill, 2: Isabelle Holt.

Euphorbia

1 & 3: Rod McGill, 2: J. Owen Stradling.

Gasteria

1 & 3: Rod McGill, 2: Mrs. S. R. Stevens.

Haworthia

1: J. Owen Stradling, 2 & 3: Rod McGill.

Kalanchoe

1 & 2: Rod McGill, 3: J. Owen Stradling.

Mesembryanthemum

1, 2 & 3: J. Owen Stradling.

Pleiospilos

2 & 3: Rod McGill.

Sedum

1: Rod McGill, 2: J. Owen Stradling, 3: Mrs. S. R. Stevens.

Stapelia

1 & 3: Rod McGill, 2: Laura Nixon.

Yucca

1 & 2: Rod McGill.

Any other succulent species

1: Isabell Holt, 2: Rod McGill, 3: Mrs. Paul Willemsen.

Desert Trees

1: Rod McGill, 2: Bill Thornton.

Desert Shrubs

1 & 3: Mrs. Ruth Garland, 2: Clifford Schroeder.

Any other desert plants

1 & 2: Rod McGill.

Dish Gardens of Cacti

1: Mrs. Richard Williams, 2: Mrs. T. H. Ockrassa, 3: Mrs. Ruth Garland.

Dish Garden of Succulents

1: Mrs. S. R. Stevens; 2: Isabelle Holt, 3: Anne Barton.

Dish Garden of Cacti and Other Succulents

1: Mrs. Richard Williams, 2: Audrey Baldwin, 3: Isabelle Holt.

Centerpiece of Cacti

1: Mrs. R. I. Turner, 2: Isabelle Holt, 3: Monnie Speck.

Centerpiece of Succulents

Special: Monnie Speck, 2: Mrs. Richard Williams, 3: Isabelle Holt.

Cacti and Other Succulents Centerpiece

1: Mrs. R. I. Turner, 2: Mrs. Monnie Speck, 3: Mrs. N. M. Blomquist.

Centerpiece of Dried Desert Material

1 & 2: Monnie Speck, 3: Mrs Glenn H. Hodson.

Centerpiece of Mexican Influence

1: Monnie Speck, 2: Isabelle Holt, 3: Mrs. Richard F. Williams.

Any Other Centerpiece

2: Isabelle Holt.

Cacti Araangements Against the Wall

1: Mrs. Glenn H. Hodson, 2: Alan Blackburn.

Succulent Arrangement Against the Wall

Special & 3: Monnie Speck, 1: Mrs. Glenn H. Hodson, 2: Mrs. T. H. Ockrassa.

Cacti and Other Succulents Arrangement Against the Wall

1: Mrs. R. I. Turner, 2: Mrs. S. R. Stevens.

Natural Dried Desert Material Against the Wall

1 & 2: Monnie Speck, 3: Mrs. Glenn Hodson.

Mexican Influence Arrangement Against the Wall

1: Mrs. Richard Williams.

Any Other Arrangement Against the Wall

1 & 3: Monnie Speck, 2: Betty Blackburn, Tucson.

Corsages of Dried Desert Materials

1, 2 & 3: Monnie Speck.

Miniature Arrangements Under 5 inches

1: Mrs. Ruth Garland, 2 & 3: Monnie Speck.

Miniature Arrangements Under 8 inches

1, 2 & 3: Mrs. Monnie Speck.

Strawberry Jars of Succulent Plants

1: J. B. Hales, 2: Mrs. N. M. Blomquist, 3: Mrs. Ruth Garland.

Black and White Photographs

Special: Hobart Pribbenow, 1: Bill Shafer, 2: Howard W. Soule, 3: Agnes M. Holst.

Oil Paintings

1: Ignatius Banasewicz, 2: Omar H. Lewis, 3: Leona Durham.

Water Color Paintings

1: Isabelle Holt, 2: Clifford Schroeder, 3: Ignatius Banasweicz.

Use of Desert Woods

1: M. A. Natanson, 2: Rod McGill, 3: Eric Olsson.

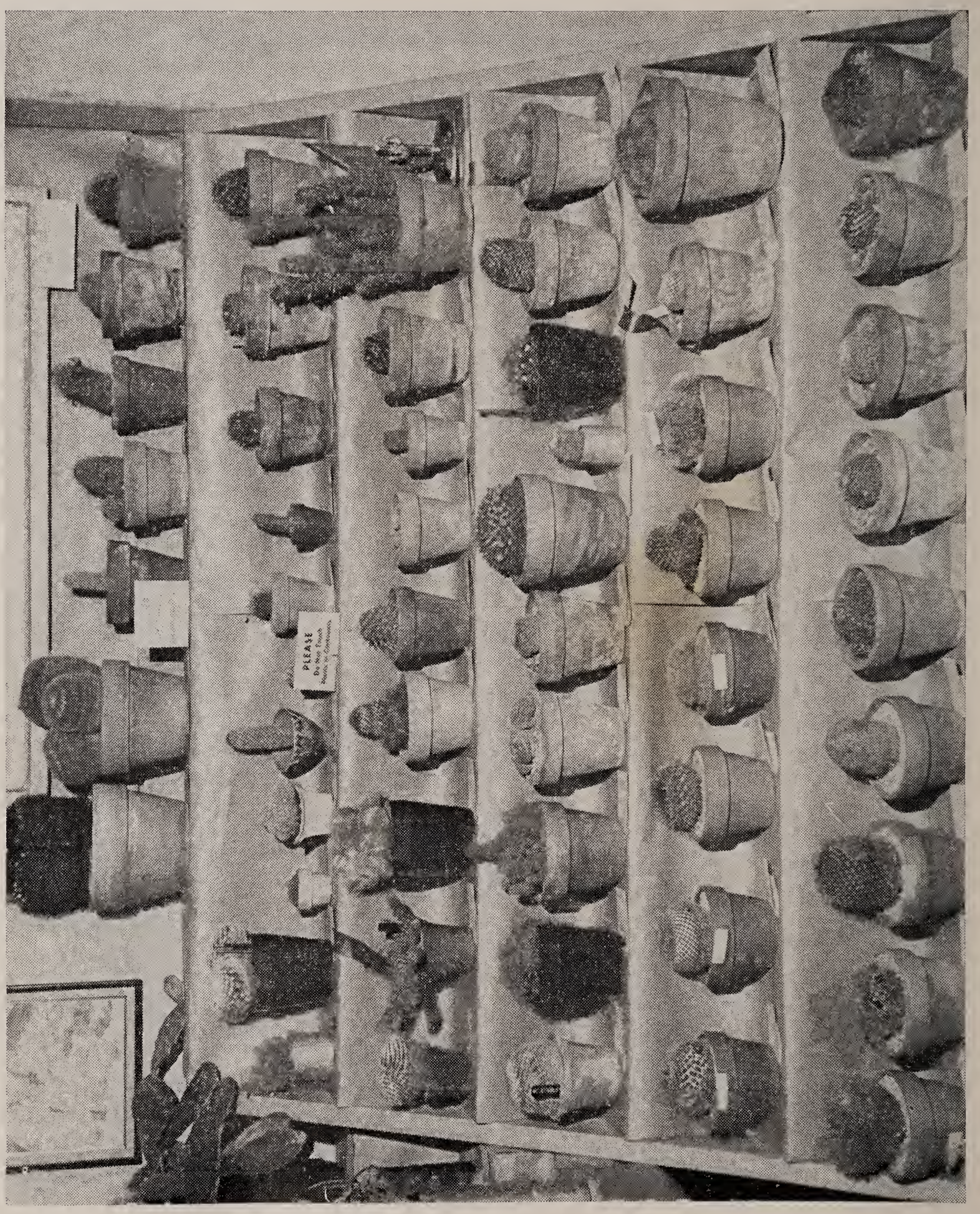
DISH GARDEN OF LEAF SUCCULENTS
by Mrs. Isabelle Holt

CENTERPIECE OF SUCCULENTS
by Mrs. Monnie Speck

All photographs in this issue were taken by Mr. John H. Eversole, Chairman of our Board.

PLANT OF THE MONTH

Lace Hedgehog, *Echinocereus reichenbachii,* is a prolific, early-blooming plant having large blossoms that often hide the plant. These small hedgehogs, up to 6" tall, are found in Oklahoma and Texas in sparse grass lands or rocky hillsides. The pectinate (comb-like) spine clusters resemble a pattern of lace thus giving the plant an appropriate common name for the collector.



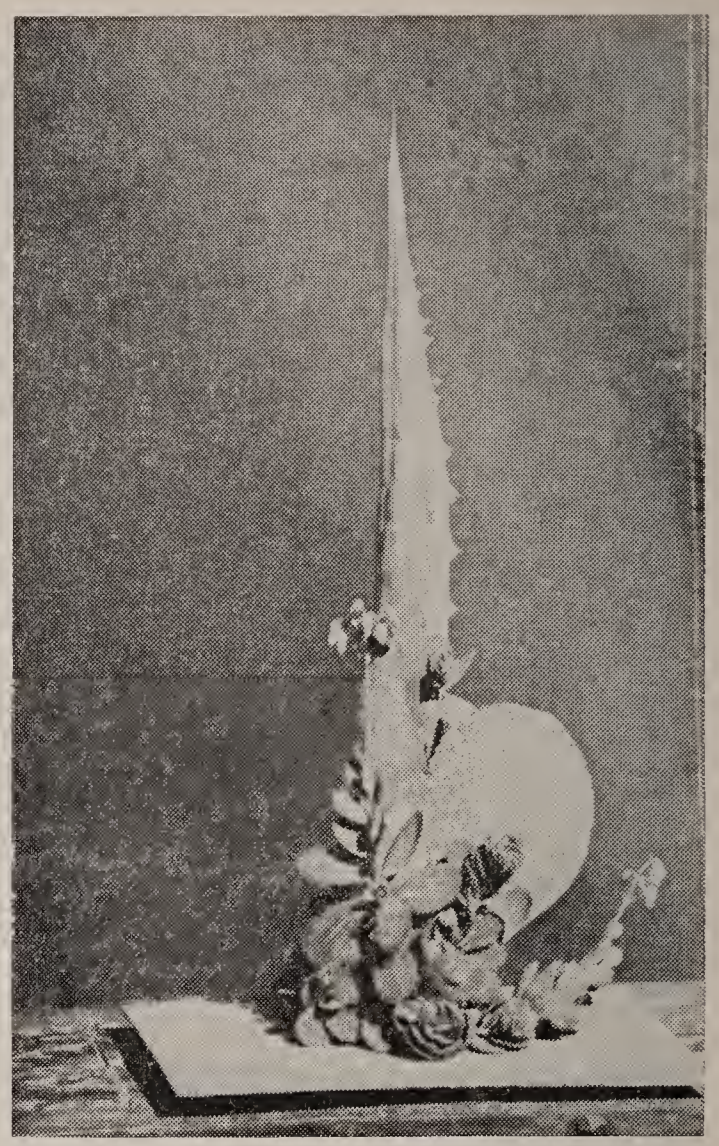
A good display of Mammillarias. Many were in bloom.

A part of the excellent showing of Agaves. On the wall are a few of the many excellent water color paintings.

A few of the 220 succulents entered in this year's show. In the foreground are some of the Cacti and Succulent Centerpieces. On the wall are three of the twelve oil paintings that added much color to the Show.

An outstanding non-competitive exhibit by Herb Bool of Sandyland Cactus Gardens. The arrangements were quite unusual and attracted many of the 13,300 visitors who attended the Show.

Dried Desert Material Arrangement against the wall by Mrs. Monnie Speck.



Cacti and other Succulents arrangement against the wall by Mrs. I. R. Turner.

SPRING CLASS

In a "Better Understanding of Desert Plants" will begin at 3 P.M. Wed., March 8th. An increasing interest in how to identify and grow desert plants has caused our classes to greatly expand. The winter course, completed last month, had a registration of 208 persons with a weekly average of 76. This really taxes our facilities but we enjoy extending this free service to all interested persons.

CALENDAR OF EVENTS FOR MARCH

2nd 3 P.M.—Illustrated Lecture—Arizona Wildflowers.
8th 8 P.M.—Cactomaniacs.
9th 3 P.M.—Class—Deserts, how formed and their plants.
10th 3 P.M.—Illus. Lecture—Ariz. trees & shrubs.
16th 3 P.M.—Propagation of Desert Plants.
17th 3 P.M.—Illus Lecture—Succulents other than cacti.
23rd 3 P.M.—Class—Desert succulent plants.
24th 3 P.M.—Illus. Lecture—Ariz. Birds, Animals, etc.
30th 3 P.M.—Class—Identification of desert trees.
31st 3 P.M.—Illus. Lecture—Collecting plants in Mexico.

SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XV April, 1961 No. 4

1st Place Strawberry Jar entered by John B. Hales, 1961 Cactus Show.

John H. Eversole photo

REG MANNING

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W. HUBERT EARLE, Editor

Volume XV | April, 1961 | No. 4

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Desert Botanical Garden of Arizona

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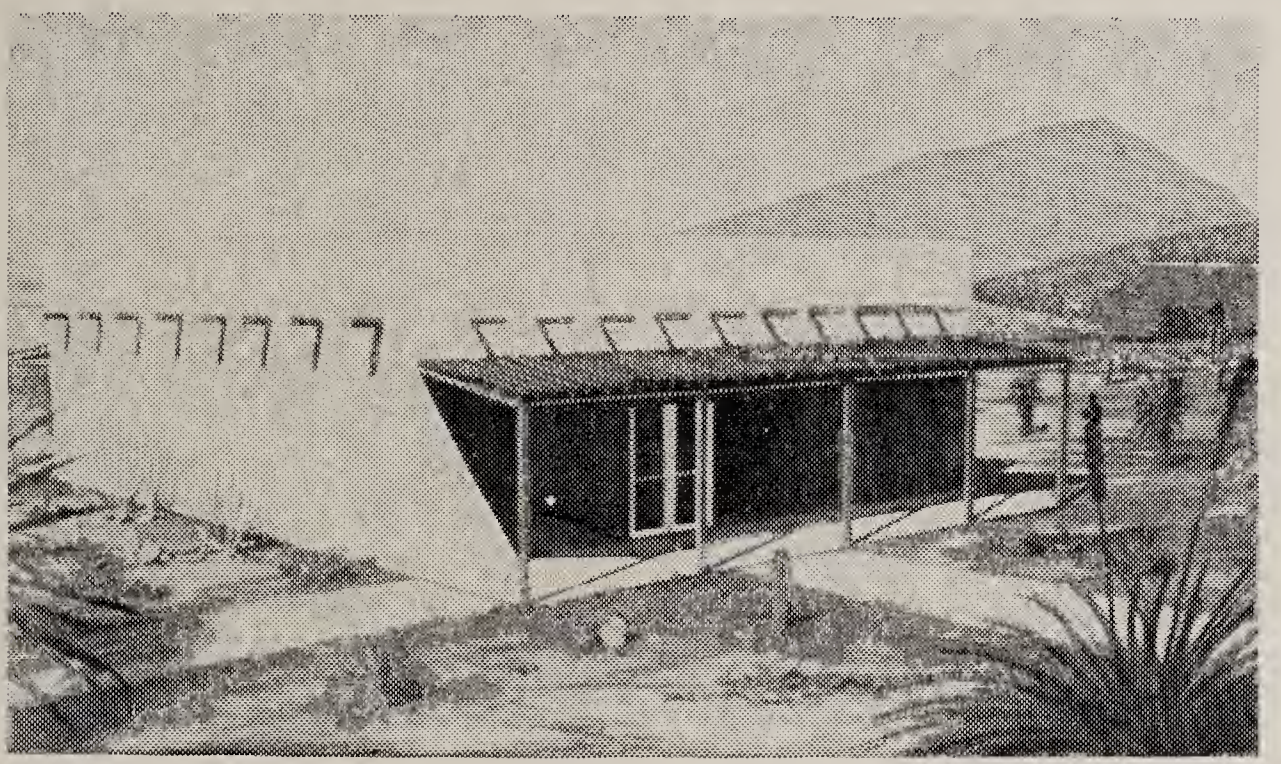
Student Horticulturist	John R. Earle

GARDEN OPEN DAILY 9 A.M.—5 P.M.
Including Week-ends and Holidays

ANNUAL MEMBERS MEETING

The Annual members meeting of the Arizona Cacti and Native Flora Society will be held the first Sunday of May (May 7th) at 3 P.M. in the Webster Auditorium for the election of officers for 1961-62.



Sketch by Les Mahoney of Lescher & Mahoney, Architects, of proposed new Visitors' Building, May, 1961.

Complete Visitors' Reception Bldg., November 1961, by contractor Dean Cofman, Scotsdale.

DEDICATION OF VISITOR'S BUILDING

A building that had been a dream for the past years became a reality when it was dedicated Feb. 20th during our 14th Annual Cactus Show by the honorable Paul F. Fannin, Governor of Arizona.

For the past three years the Garden had accumulated about $11,000 from contributions, sale of seeds and cuttings so that when the Board met Jan. 1960, they authorized Les Mahoney, Chairman of the Advisory Board, of Lescher and Mahoney, Architects to draw up plans and specifications for a 30' x 40' Reception building.

The Board met in May and under the insistence of Mel Hinman and Reg Manning the building was increased one-third to 40' x 40', to take care of anticipated large crowds, and bids were then requested.

At the next Board meeting bids were opened and they ranged from $16,000 to $25,000. The Board unanimously voted to seek a loan of $6,000 and request additional bids. Board members Lou Ella Archer, John Rhuart, Angela Bool and Tom Goodnight arranged the loan thru the Valley National Bank.

Governor Paul F. Fannin cutting ribbon at entrance to new Visitors' Bldg. during 14th Annual Cactus Show. On the right is John H. Eversole, Chairman of the Board, who arranged for this ceremony. On the left is your Editor. In the darkened background are Board Members Reg Manning, Charles Mieg and Mel Hinman.

Photo by Larry McGrath, Tempe Daily News

Inside view of Visitors' Reception Bldg. showing sales counter, wall display cases (which are now filled) and our excellent overhead lighting.

John H. Eversole photo

Later in June a contract was issued to Dean Coffman, Scottsdale, for $16,400 who began construction in July and completed the building in early November. He did an excellent job, worked out additional features at no extra cost and saved us money. The leaching basin for the septic tank would have cost us an additional $700 due to the caliche soil and city regulations but Charles Mieg came to our rescue with his blasting crew. We certainly appreciate his generosity.

Since the new building fits so well into our over-all plan we hear visitors comment on how easy it is to park, go thru the building, visit the garden and return back thru the building. This new set-up has caused our contributions and sales to go up 50% over the same period as last year. This increase in revenue has allowed up to pay $2000 towards our loan and the balance will be completed this year.

The Board certainly wishes to extend its thanks to all those persons who generously contributed cash, materials or their time towards the completion of this fine building which is needed by a growing Garden for the largest daily crowds in the history of the Garden.

Landscaping will be completed by our staff this spring with plants moved from crowded areas of the Garden. The estate of the late Miss Helen Brinton contributed 3 trailer loads of plants that are now an added attraction to the Garden.

Another inside view showing doors leading off to storage, stock and rest-rooms. The cooling and heating ducts can be seen in the upper portion of the walls. This heat-pump refrigeration unit will allow us to keep the Garden open for summer visitors.

View of new black-topped path leading from Visitor's Bldg. to the Garden. Note the Golden Barrel cactus planted in a pile of black volcanic rock. At lower left can be seen a few of the large Astrophytums or Star cactus.

PLANT OF THE MONTH

Purple Prickly Pear (*Opuntia gosseliana var. santa-rita*). A very attractive prickly pear that is found in the foothills of the Santa Rita mountains, south east of Tucson, Ariz. The plant assumes a purplish color during periods of drought and cold. The new pads, in the spring, are of a dark velvety purple and set-off the lime-yellow blossoms of the plant. Propagates very readily from the pads.

DIASPIS ECHINOCACTI (Bouch'e) FAMILY COCCIDAE

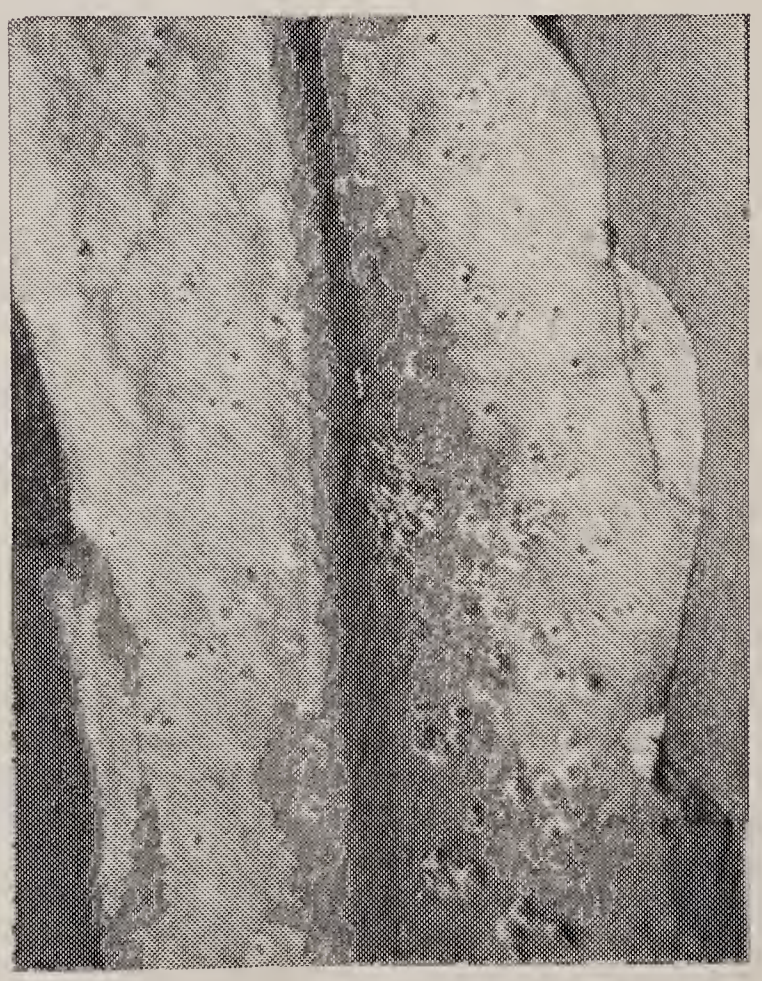
CACTUS SCALE

DESCRIPTION:

Diaspis echinocacti is a very prolific scale insect that bears several broods each year. The female scale is rather thin, circular in shape, and colored a light-grey or greenish-white. In diameter it varies from one and a half to two and a quarter millimeters. The male scale is light green or white in color. It is very small and slender with a longitudinal keel in the middle. In size it is about 1.25 mm. in length and .25 mm. wide. Being prolific, the cactus scale soon makes a heavy infestation.

DISTRIBUTION:

Diaspis usually occurs in areas having warm climates. It ranges from Brazil in South America through Mexico into the United States. It is a common species found in Texas, New Mexico, Arizona, California, Florida, Iowa, Massachusetts, New York, and probably others, Cuba, Mauritius, and India have also reported the scale.



Diaspis echinocacti in clusters

Cactus scale on an Epiphyllum stem

DAMAGE:

Cactus scale frequently infests ornamental gardens, hot-houses, artificial plantings, and indoor planters. The scale encrusts the surface often covering the host plant. Opuntia, Cereus, and Epiphyllum seem to be particularly susceptable to attack. Resultant loss of sap from heavy infestation often kills the plant.

CONTROL:

Small plants can be dipped in kerosene or crude oil emulsions to destroy the scale. Larger plants can be covered with oil emulsion sprays. Oil sprays should not be used in full sun when temperatures are 80°F or above.

REFERENCES

Essig E.O. — **Insects of Western North America.**

Essib E. O. — **Injurious and Beneficial Insects of Calif.**

Herrick G.W. — **Some Scale Insects of Mississippi. Miss. Agric. Exper. Sta. Tech Bull. No. 2 Feb. 1911.**

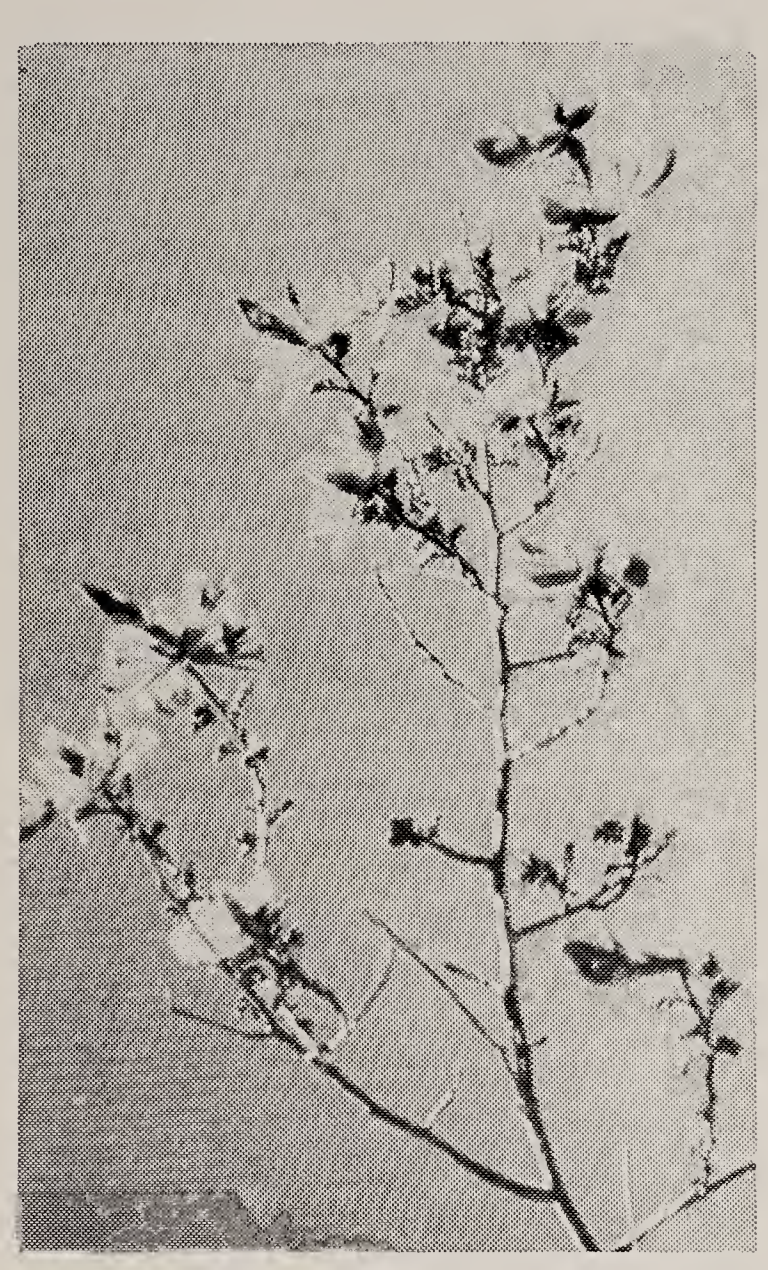
Merrill & Chaffin — **Scale Insects of Florida Quart. Bull. of the State Plant Board of Florida. July 1823. Vol VII. No. 4.**

DALEA FORMOSA TORR. LEGUMINOSAE (PEA FAMILY)

FEATHER-DALEA

DESCRIPTION:

An intricatly branched low shrub growing to three feet in height and two and a half feet in breadth. Branches are woody and glabrous; the bark a light color. Leaves are pinnate with seven to fifteen leaflets which are dotted with dark glands. The leaflets are obovate in shape, three mm. in length, and gabrous. Generally there is two flowering periods, one in the spring and again in the fall or winter. There are from two to six flowers arranged in a small head. Petals vary from red to magenta. The glabrous seed pods are obovate in shape and three mm. in length.



Flowering branch of *Dalea formosa*

DISTRIBUTION:

Feather-Dalea is native in Mexico and the United States. It extends from Sonora and Chihuahua in Mexico north into Arizona, New Mexico, West Texas, Southern Utah, and Colorado. In Arizona the plant ranges into Navajo, Southern Coconino, Yavapai, Graham, Cochise, Santa Cruz, and Pima counties. Dalea is found at an elevation from 3,000 to 6,500 feet in the Mesquite-Creosote and Oak Woodland associations. It is scattered on gravelly or rocky slopes, dry plains, hills, and mountains.

Dalea formosa bush, 6 yrs. old, 3½ feet tall.

UTILIZATION:

DALEA FORMOSA can be used as a basic foundation plant or individually as a specimen shrub.

Flowering profusely and through a prolonged period, it makes an attractive flowering plant. Massed in composite groupings it would provide a splash of

Dalea formosa blossom 1¼X

color for otherwise drab and colorless sites. A low growing shrub with finely textured silvery foliage, it creates a pleasing contrast when used with plants of coarser foilage and deeper color.

CULTURE:

A full sun exposure and rocky well-drained soil meet the conditions required by Feather-Dalea. It is capable of withstanding extended drought, and excessive water during hot months can prove destructive to the plant. Dalea is generally free of disease and insect pests. Spatial requirements are not extensive and fertilization is unnecessary.

PROPAGATION:

Propagation is by means of seed. The seed is very small and pretreatment is not necessary. Seedlings are particularly susceptable to damp-off during warm months so that sterile cultural practices coupled with judicious water control should be observed.

AVAILABILITY:

DALEA FORMOSA is not known to have been grown for commercial trade. Seed dealers specializing in native plants have seed available at times.

REMARKS:

Feather-Dalea is considered good browse for cattle and is especially platable to deer. It is sometimes grazed by goats and sheep.

REFERENCES

Benson and Darrow — **Trees and Shrubs of the Southwestern Deserts.**
Dayton W. A. — **Important Western Browse Plants**
Kearney and Peebles — **Arizona Flora**

DOUBLE 'FLUB'

When we 'flub' we really 'flub'. This plant was pictured on the coverof last month's Saguaroland Bulletin as *Ariocarpus fissuratus* but is is *Ariocarpus retusus*. It was not exhibited by Rod McGill but grown and shown by Alan Blackburn, Tucson, Ariz. We extend our humble apologies.

QUESTIONS AND ANSWERS

Is it too late to plant Wildflower seeds? Mrs. E., Phoenix.

Yes it is now too late to plant wildflower seeds in the lower elevations of the southwest. The best time is in the late fall. Scatter the seeds on the ground then rake them into the soil and water lightly so that the seeds will adhere with the soil until the winter rains germinate the seeds. If the winter rains do not appear then set a sprinkler over your wildflower bed and keep it moist.

If you have scattered the seeds in an open area, they may be bothered by birds eating the seeds before and during germination. The placing of dead branches or loose woven wire over the planted area will keep the birds away until the plants are large enough to take care of themselves.

Many of your wildflowers will reseed themselves from year to year if they get moisture.

Wildflower seed can now be sown during the spring, after all signs of frost are gone, in the higher or cooler parts of the State and country. The same planting instructions should be followed as given above.

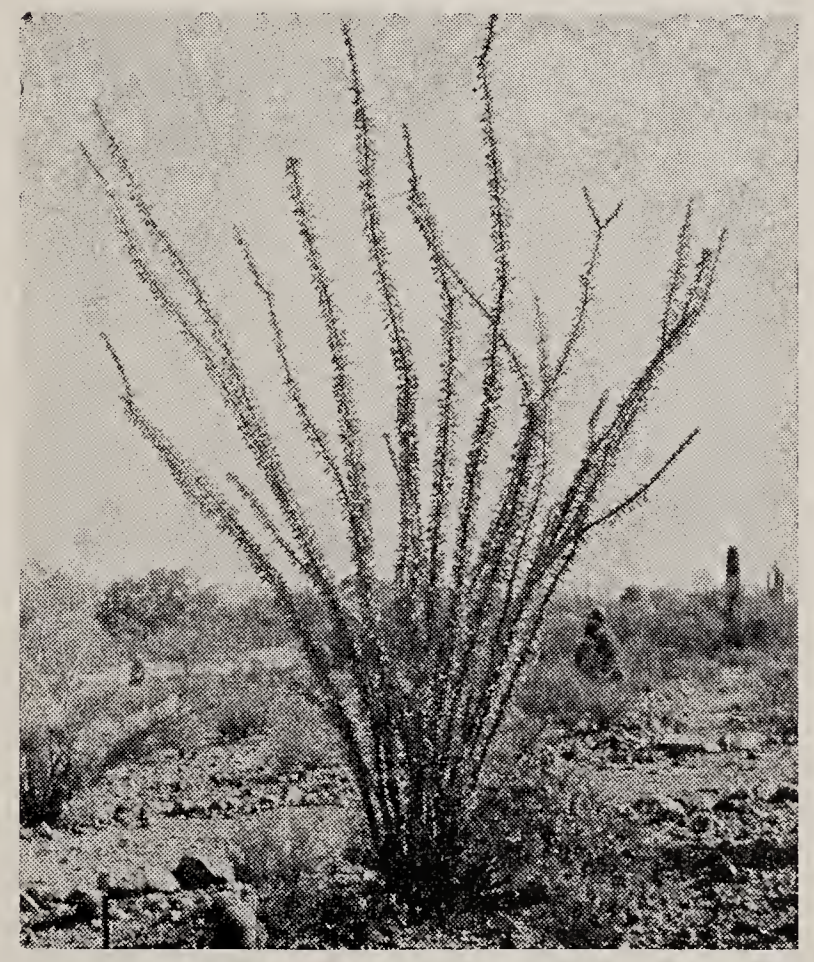
Each spring the Richfield Oil Corp. helps perpetuate the growing of wildflowers by distributing packets of wildflower seeds to their filling station customers. They also give an excellent colored booklet of wildflowers of the west which is quite handy in identifying flowers that you find in bloom along the roadsides or hillsides in the spring and summer.

Can I start Ocotillos from cuttings? Mrs. D., Scottsdale, Ariz.

Yes! Ocotillos will start from cuttings in the springtime. Cut the branches off close to the ground with a sharp knife, dip the cut-end in a rooting hormone and place end about 10" down in the ground and keep moist thru the hot summer months.

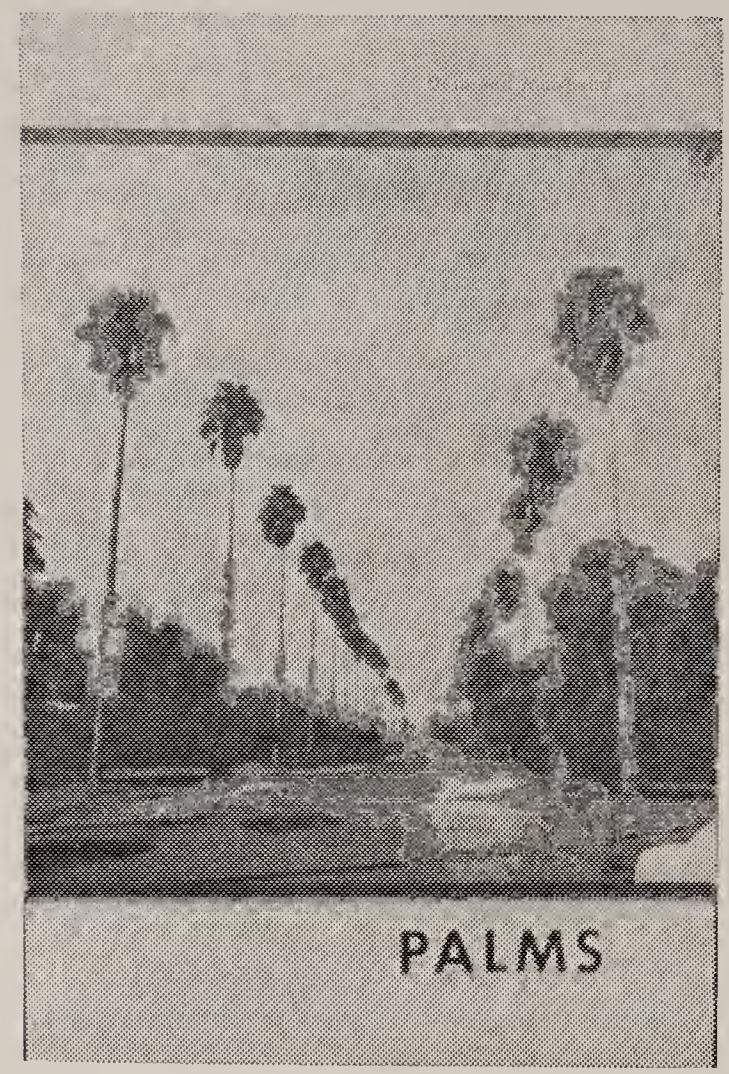
Do not become alarmed if the old leaves or new leaves turn yellow and drop off as this is a natural behaviour of the plant. New leaves will appear later.

A person can make an ocotillo 'plant' by grouping 3-4 stems together with wire wrapped around the base of the stems. Plant this cluster about 12" deep, spread the branches slightly apart as you shovel in the dirt until they have a graceful sweep. Keep slightly moist during the hot summer months.



Fouquieria splendens Ocotillo

BOOK REVIEW



PALMS — Desmond Muirhead: Feb 1961, 141 pages, paper, 42 black and white photos, 28 pages of line drawings, Dale King Publisher, Globe, Ariz. obtainable at Desert Botanical Garden Bookstore — $2.10 postpaid.

Here, at last, is an inexpensive and quite conclusive book on Palms directed to the growers, enthusiasts and landscapers of the southwestern states who wish to know more about the propagation and the growing of these interesting plants.

Many excellent black and white photos, light sketched line-drawings aid in the classifying and identification of the many species shown in this well written book. Thirty-four 'palm-like' plants are also sketched or mentioned along with landscaping plans showing that a few palms can enhance any home, shopping center or industrial site.

CALENDAR OF EVENTS FOR APRIL

4 8:00 P.M.—Cactomaniacs.

5 3:00 P.M.—Class—Desert Survival Plants.

6 3:00 P.M.—Ill. Lecture—Ariz. Cacti in Bloom.

12 9:30 A.M.—All-day desert Field Trip.

13 3:00 P.M.—Ill. Lecture—Ariz. Wildflowers in Bloom.

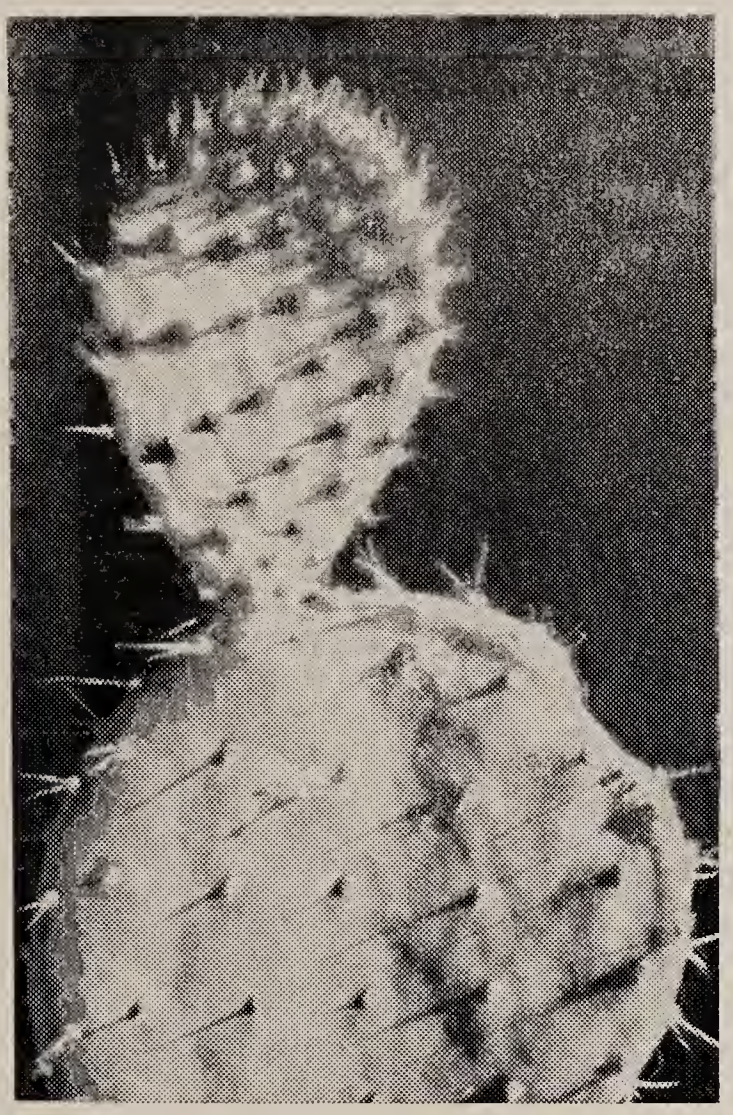
20 3:00 P.M.—Ill. Lecture—Ariz. Trees & Shrubs in Bloom

27 3:00 P.M.—Ill. Lecture—Ariz. Birds & Animals.

SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XV May, 1961 No. 5



Tuna or Nopal pads

See p. 58

REG MANNING

SAGUAROLAND BULLETIN

Published and owned by the Arizona Cactus and Native Flora Society, sponsors of the Desert Botanical Garden of Arizona, P.O. Box 547, Tempe. Saguaroland Bulletin attempts to promote the Garden and to provide information on the desert plants and their culture. Subscription $5.00 per year, the subscription including active membership in the Society and the Desert Botanical Garden. Issued 10 times a year.

W. HUBERT EARLE, Editor

Volume XV | May, 1961 | No. 5

Arizona Cactus and Native Flora Society

EXECUTIVE BOARD

Chairman of Board	John H. Eversole	President	Lou Ella Archer
Vice President	John H. Rhuart	Treasurer	Tom Goodnight
Secretary	Angela Bool	Chief Counsel	Richard B. Snell

BOARD MEMBERS

Edward L. Burrall — Charles Mieg — Mel Hinman
Reg Manning

Chairman of the Advisory Board — Leslie J. Mahoney

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Desert Botanical Garden of Arizona

STAFF

Director	W. Hubert Earle
Horticulturist	John H. Weber
Maintenance & Bookstore	Wm. C. Hendrix
Bookstore	June T. Hendrix
Student Horticulturist	Demitrios Vlachos

GARDEN OPEN DAILY 9 A.M.—5 P.M.
Including Week-ends and Holidays

ANNUAL MEMBERS MEETING

Was held Sunday May 7th in the Webster Auditorium. Mrs. Lou Elle Archer was chairman and Mrs. Angela Bool secretary.

As usual the attendance was small but that is due to the fact that hundreds of our members had mailed their ballots several weeks prior to the meeting. We certainly wish to thank our members for being so prompt in returningi their ballots.

Mr. John Rhuart and Mr. Edward Burrall were reelected for 4 year terms. A report was made by the Director on the year's progress and plans for the future.

ANNUAL BOARD MEETING

The Executive and Advisory Boards members and their wives met at the Los Olivos Lodge, May 16th for the Annual Board Dinner which was presided by John H. Eversole, Chairman of the Board.

MINUTES of the last meeting were read by Angela Bool — approved.

FINANCIAL report of 1960-61 was given by the Director and is shown on page 53. A report of past activities and future plans were also given.

CITY OF PHOENIX PARKS BOARD request for some of our Garden land was presented by Les Mahoney. This will be an area cut-off from the Garden by a new road but the Parks Board will in turn transfer an additiona area to the Garden. A committee of Les Mahoney, John H. Eversole and your Director were authorized to negotiate the area in question.

LEASE of the Garden was reviewed and Mr. Richard B. Snell was instructed to study our Lease with the City of Phoenix and the lease of the City of Phoenix and the Arizona State Land Commission, the latter transferring existing leases to the City in 1958.

NEW VISITOR'S RECEPTION BUILDING was reported upon by Mel Hinman. Its six month success in sales and the reception of visitors is due to its design by Les Mahoney and its construction by Dean Coffman. Both men contributed a great deal of their time and money and are to be commended. Mr. Charles Mieg was instrumental in creating a large leaching basin by extensive blasting thru caliche. This increased area will take care of our septic tank run-off for many years.

MEETING was adjourned with the Board commending the Staff for another successful year and showed its appreciation by extending a 10% increase in salaries for the 1961-62 season.

DIRECTOR'S REPORT

Unaware of the fact that during the past year there was a 25% eastern and a 10% western decline in the tourist business, the Garden had an increase of about 20% in attendance and a 45% sales increase in our Bookstore.

Fortunately our reserve plus the income increase of nearly 25% offset our cost of operations and building program which was 27% over that of last year leaving a healthy cash balance as shown on the opposite page.

In reviewing the Financial Report notice the three columns. The first column was our anticipated budget for 1960-1961; the second column shows our actual 1960 61 income and expenditures; the third column is a comparison of the previous year (1959-60) income and operational cost.

Retail sales took a terrific jump of about 45%, most of this was due to our new Reception Bldg. as all visitors now pass the Bookstore counters while entering and leaving the building. Many new items of Arizona merchandise, pertaining to the desert have been added to our large display of books and cards, etc.

Income from the sale of seeds, cuttings and canned shrubs was less than last year because the wholesale market for cactus seed was 'glutted'. The market should be back to normal this year.

Memberships are the highest in the Garden's history but the membership income was less because many of the higher bracket memberships were renewed in the lower brackets likewise new memberships were received mostly in the lower bracket. Still, we cannot complain for we are most grateful for the faithful renewals each year by our members.

Our Building and Improvements outlay was greater as we took advantage of the additional excellent Student-help to build paths, parking lots, and landscape newly opened areas.

It is interesting to note that our Utilities were slightly less than last year even tho we built and occupied an additional building (Visitors Reception Bldg.). This was due to using less Butane for heating. The new building is heated and cooled with electricity at a very nominal cost for its 1200 sq. ft.

Our insurance was naturally higher because of the additional building, increased stocks, burglary and liability coverages.

Salaries were much higher than planned because of additional projects and workers during our building program and an incease in wages.

This is the first year that our net income from sales, $30,557.19 less $17,836.15 or $12,721.04, has exceeded the income from our Webster Endowment. We hope to have a moderate increase of about 20% for next year for both income and expenditures. If our building program stays at a low level we should then have a larger amount of cash in reserve for future planning.

It is most gratifying to give this report to our members and to our most co-operative Board who keeps us 'checked' and solvent.

ARIZONA CACTUS & NATIVE FLORA SOCIETY

Sponsoring

The Desert Botanical Garden

FINANCIAL REPORT

May 1st 1960 — April 30, 1961

INCOME

	Budgeted	Actual	1959-1960 Comparison
Retail Sales	24,000	30,557.19	21,956.04
Seeds	2,000	1,785.43	2,479.54
Plants, cuttings	500	259.75	235.75
Contributions	1,000	1,974.82	1,049.42
Memberships	3,000	2,579.00	2,730.00
Wholesale	1,000	71.71	81.31
Webster Trust Endowment	11,000	11,116.74	11,154.93
Miscellaneous	700	140.75	691.20
	$43,299	$49,485.19	$40,375.19

EXPENDITURES

Purchase for resale	13,00	17,836.15	12,709.45
General Operating	3,000	3,692.45	3,550.35
Buildings & Improvements	1,000	2,258.39	1,159.14
Automobile Expenses	6,000	680.14	546.01
Utilities	1,500	1,472.84	1,486.15
Insurance	800	1,151.86	867.16
Miscellaneous	900	944.69	885.77
Salaries	15,000	19,230.17	15,341.60
	$37,900	$46, 267.17	$36,545.67

ASSETS

Accounts Receivable	6.26		
Inventory	3,362.21		
Deposit — Arizona Industrial Com.	96.00		
		$3,464.46	

CASH

VNB — Checking	1,256.69		
VNB — Savings	32.50		
1st Fed & Loan Lavings	989.00		
Petty Cash on hand	74.00		
		$2,352.19	
			$5,816.65

LIABILITIES

State Withholding Tax (April		6.84	
Balance due Valley Nat'l Bank on loan on Visitor's Reception Bldg.		1,250.44	1,256.84
		Balance	$4,559.81

CAPITAL GAIN

Visitor's Reception Bdg. $19,100.00

Membership gain for past 5 years

1956-1957	435	Members
1957-1958	475	Members
1958-1959	540	Members
1959-1960	615	Members
1960-1961	652	Members

ANTICIPATED BUDGET 1961-1962

INCOME		EXPENDITURES	
Retail Sales	36,000	Purchases for resale	20,700
Seeds	1,900	General Operating	3,520
Plants, cuttings	350	Bldgs & Improvements	420
Contributions	2,000	Auto Expense	650
Memberships	2,700	Utilities	1,545
Wholesale	100	Insurance	1,145
Endowment	11,500	Miscellaneous	1,080
Miscellaneous	1,150	Salaries	16,800
	$55,350		$45,860

SUMMER PROGRAM

Garden will remain open daily throughout summer 9 A.M. to 5 P.M.
Two plant & seed collecting trips in Ariz. & Utah.
Two plant & seed collecting trips in Mexico.
Publish 'Cacti of the Southwest," 5,000 copies.

SUMMER BUILDING PROGRAM

Widen paths adjacent to Auditorium
Extend water lines.
Install electric drinking water coolers
Install Flourescent lights in Auditorium
Relocate Public Address System in Auditorium
Build two ramadas (shelters)

Attendance for past year was about 115,000 plus the following activties.

At The Garden

23	Illustrated Lectures	940
15	Casses	858
8	Cactomaniac Meetings	
	14th Annual Cactus Show	11,613
52	Elementary School Classes	2,055
8	High School Classes	362
21	University Classes	895
24	Boy & Girl Scouts, Camp Fire etc. units	390
9	Garden Clubs	242
1	Desert Biology Institute	68
2	Service Clubs	71
2	Camera Clubs	65
	Arizona Nurserymen Assn.	26
5	Conventions	273

Away From The Garden

3	Service Clubs	122
1	Ariz. Nurserymens Assn.	72
1	Mineralogical Society	84
3	Garden Clubs	63
3	Field Trips	104
6	Hotels and Motels	222
1	A.A.A.S., Western Division	120
1	National Shade Tree Conference	56
1	Yuma County Garden Club	32
1	Fort Huachuacha Class	26
1	Phoenix College Landscaping	40
6	High Schools — Arizona Academy of Science-Traveling Science Institute, sponsored by the National Science Foundation	660

PLANT OF THE MONTH

Echinocereus amoenus is a small, low, often buried hedgehog that resembles a miniature barrel-type cactus. Grows up to about 3" tall and 6" wide and is a native of the State of San Luis Potosi, Mexico. It is not found in many American collections yet it bears lovely magenta blossoms in the early spring.

CALLIANDRA ERIOPHYLLA
FAIRY DUSTER

Leguminosae
Pea Family

Calliandra eriophylla (Fairy Duster) bush in bloom—3½' tall and 5' wide

DESCRIPTION:

The Fairy-Duster grows as a small, straggling, bushy shrub and when heavily grazed it assumes a prostrate almost vining growth habit. The main branches of this thornless perennial are quite woody and stout. In its native habitat this plant most commonly attains a height of from 3 to 12 inches, but on protected sites or under cultivation it may reach 3 feet. Leaves are covered with a grayish appressed pubescence and are primarily divided into one to six pair of leaflets. These primary leaflets are again divided into four to seventeen pair of secondary leaflets, none of which exceeds one eight of an inch in length or width. Flowering period extends from February to May. The flowers are pink or reddish-purple and on rare examples white. Twenty or more stamens are long-exerted and give the flower the appearance of a dimunitive duster. A flat pubescent seed pod is oblanceolate in shape with a length of two inches and a width of one quarter inch. There is a thickened margin on the pod along which a lengthwise splitting occurs upon ripening resulting in the ejection of seed. The tip of the pod is terminated by a short, slender, apical point. The ripened seed is disseminated from May to August. These are obovate in shape and have a smooth gray texture and color.

DISTRIBUTION:

Fairy-Duster is common on the foothill slopes and mesas of the desert and desert grasslands. It grows on warm, open, sunny situations at elevations ranging from 2,000 to 4,500 feet. Soil type is that of a dry sandy gravel of granitic origin where it is associated with **Erodium sps** (filaree), **Acacia greggii** (catclaw), **Hilaria belangeri** (curley mesquite grass), and **Bouteloua sps.** (lower range gramma grasses).

Distribution ranges from southeastern California through Arizona into New Mexico, western Texas, and south into the lowlands of Chihuahua and Sonora, Mexico. In Arizona the species extends from southern Mohave country east into Yavapai and Maricopa counties and south into Greenlee, Cochise, Santa Cruz, Pima, and Yuma counties. It is a prominent constituent of the Colorado, Mojave, Sonoran, and Chihuahuan desert systems.

UTILIZATION:

Due to its limited size, Fairy-Duster can not be effectively used for shading or screening purposes. It would, however, provide some protection throughout the summer months for an understory planting of tender succulents. A profusion of flowers, borne in the usually barren period between late-winter and mid-spring, make the inclusion of this plant in the desert garden particu-

Fairy-like blossoms of *Calliandra eriophylla*

larly desirable. When used in mass, or alone as a specimen or foundation plant, few other desert shrubs can evoke as much comment or draw as much attention and admiration as does **Calliandra.**

CULTURE:

The Fairy-Duster requires a full sun exposure and a well drained rocky soil. This plant is intolerant to shade and heavy soil. While **Calliandra** is capable of withstanding extended drought, frequent watering will prevent it from becoming deciduous during dry periods. A manure mulch will help to retain soil moisture and provides light fertilization.

PROPAGATION:

Fairy-Duster can be propagated by seed or cuttings. The seed is not subject to embryonic dormancy, but does have an impermeable seed coat. Scarification of the coat will allow water to penetrate with a resultant high germination percentage. Second year wood cuttings when placed in sand over bottom heat and kept moist soon root out. To prevent loss of seed from dehiscence, the seed pods that appear near maturity must be collected daily and placed in an enclosed container.

AVAILABILITY:

Several species of **Calliandra** are available from commercial nurseries, but these are semi-tropical plants and will not withstand low desert area conditions. Only those nurseries specializing in desert plants are apt to carry the Fairy-Duster in stock.

REMARKS:

Calliandra is considered to be a valuable browse plant and in southeastern Arizona it is regarded as one of the most important forage plants. The foliage has a protein percentage of fourteen and is highly palatable to both sheep and cattle as well as deer and bighorn sheep. It functions also as a soil binder for erosion control purposes.

REFERENCES:

Benson and Darrow — The Tree and Shrubs of the Southwestern Deserts.

Dayton W. A. — Important Western Browse Plants.

Gentry H. S. — Rio Mayo Plants.

Jaeger, E. C. — Desert Wild Flowers.

Kearney and Peebles — Arizona Flora.

Russo, J. P. — The Desert Bighorn Sheep in Arizona.

Swank, W. G. — The Mule Deer in Arizona Chaparral.

---

by John Weber

NOPAL
TUNA
PRICKLY PEAR
CACTUS FAMILY

Opuntia sp.

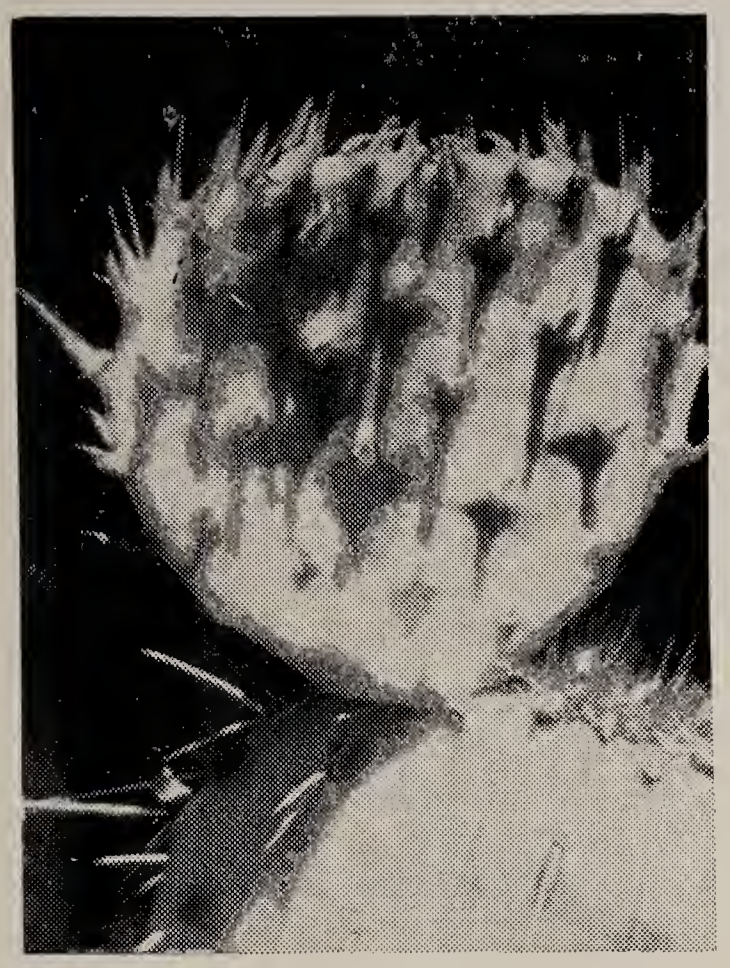
Cactacae

Have you ever heard of the mythical founding of Mexico City? Nearly any Mexican child can tell it to you. It appears that some five centuries before the arrival of Cortez, the Aztecs came into the region of the present valley of Mexico and were defeated, many being trust into slavery. But about 1325 the remnants of the Aztecs halted for a brief rest during their painful wanderings, in a marshy spot on the border of a spreading lake. There they saw, on a giant rock that rose above the waters, a **nopal** or tuna cactus, upon which was perched a great eagle holding in his beak a struggling snake. The leaders of the

expedition regarded it as a sign of divine wisdom, and believing in omens, immediately began the building of Tenochtitlan — or the place of the tuna — where now stands the present capitol of Mexico. This is of interest to New Mexicans because it connects with a local story of about that period, in which all of the forthright young men of the Rio Grande pueblos were led away by Poeyemo, one of their outstanding heroes, who was directed, by a bird with a snake in its beak, to the land in which they afterward setted. The presumption is that the legend grew out of contact with the Mexican Indians who came north with Coronado in the sixteenth century. Since that time there has been an unconscious effort to consolidate the myths of Poseyemo and the Aztec.

The word **nopal** is simply the Aztec **nocheznopalli** or **nopalli** with the last syllable of the latter lopped off by alien Spanish tongues. The Opuntias to which it is applied have extended from the Atlantic to the Pacific oceans in the United States, and form one of the most characteristic groups of cacti in the landscape of the western hemisphere, where it is native in both continents. There are some thirty species of prickly pear in New Mexico alone, two of the most common being **Opuntia engleman–nii** and **Opuntia camanchica (O. phaeacantha).**

According to Ethel Bailey Higgins, author of "Our Native Cacti," the lobes of the prickly pear are very efficacious for rheumatic inflammations. "The story is vouched for", she writes, "by a mining man of the almost miraculous abatement of inflammation from rheumatism, in the case of a man, brought on a stretcher into Ensenada, Baja, California, unable to walk, who in two days was cured as a result of the ministrations of an Indian woman who used cactus lobes." Her treatment consisted in gathering the young joints before



A young, tender Tuna pad

they developed spines, then boiling and frying them, and finally applying them to the affected parts.

Moreover, the Spanish Americans of New Mexico will tell you that the **nopal** "leaves", from which the spines have been removed, if roasted and bound while still warm on the side of the neck and below the chin, will reduce the swellings caused by mumps.

Recently, with mingled interest and amusement, I came across the following story of an accidental medical discovery by an old cattleman: " ' Now take tarantulas,' he said, 'they're nasty things . .

" 'Had an experience with one long ago that made me shy of them ever after, I can tell you,' he continued, 'I was taking some beeves from the Frio Canyon down to Fort Clark in Kinney County when it happened. We had made camp on Turkey Creek . . .

'During the night, half asleep, I felt something crawling on my face, and in striking out to drive it away, I mashed a big tarantula just at the outside corner of my right eye. Didn't think the thing had time to nip me, but his juice ran down my face, and I guess some of it got into my eye.

'Well, sir, in the morning, there was a knot as big as a turkey's egg over my right eye, closing it tight. Then I was scared. Told the boys to hold the herd and burnt the earth getting back to Uvalde. Old Doc Cummins lanced the lump, but nothin' come of it. Then he looked serious and said I better lie up and let him treat me.

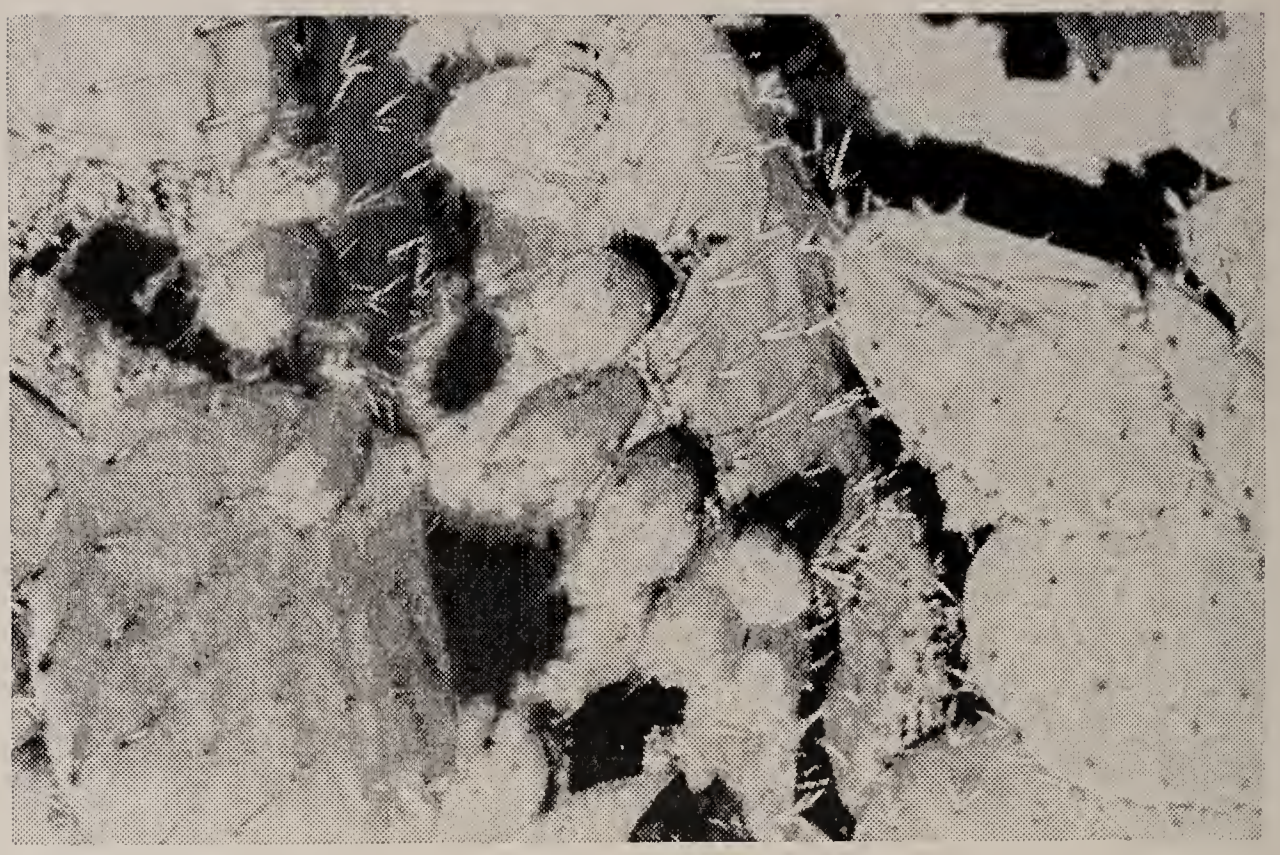
'But those beeves had to be got to Fort Clark on contract time, and I went back to Turkey Creek, with a poultice on to draw out the poison.

'The boys had killed a fat brown bear and were feastin' on it when I reached camp. The poultice had grown dry and was hot and stiff, so I took it off and threw it away. Fat bear is greasy meat and after eatin' my fill, I was cleaning my huntin' knife by wacking it into the leaves of a big prickly pear bush near the fire. After cleanin' it, I slashed off a leaf of the plant and spilt it in two. Just to kill time I tossed the halves of the leaf on the embers of the fire and watched them roast.

'The pulp sizzled and steamed and smelled good. It struck me the stuff might make another good poultice: so I scraped it out, plastered it on my neck handkerchief, and bound it over the eye.

'Well, sir, that prickly pear done the trick. The next day, the knob over my eye was half gone. Another poultice of the same kind cleaned it out good and the lance cut healed up quick.

'Since then the boys have used prickly pear poultices on themselves and their horses for festerin' wounds from tears of mesquite thorns and barrel cactus they get while huntin' beeves in the chaparral' ".



Opunti engelmannii (Englemann's Prickly Pear) bearing edible, red fruit.

Other old timers will tell you they often speared **nopal** "leaves," cut them open, and stirred them in muddy water to settle it. This agitation caused the formation of a thick scum on the top of the water, which sank in about half an hour, carrying the sediment with it.

If you were a Southwestern stockman faced with a shortage of forage, you would probably, in the manner of the West, burn off the **nopales** spines, and feed its succulent joints to your cattle. Perhaps it was from this practice that Mr. Burbank conceived the idea of developing a spineless variety.

Early Californians rejoiced in the security of high **nopal** barricades — barricades that were planted rather than built — and found in them, besides, a ready remedy for inflammation.

Those of Spanish descent in New Mexico also cure soreness by burning off the spines, splitting the segments, and placing them while hot on the irritated spots. Swollen glands in the neck are treated with a poultice of **nopal**, ground **toloache** seeds (Datura), and linseed. The **nopal** is first baked in an oven, and the linseed mixed with hot water.

Besides being a remedy for many painful afflictions, the **nopal** has a fruit which can be eaten out of hand or made into sauces and jellies.

If the lobes are peeled, boiled in salt water and friend crisp, they form a delicious dish when served with sauce.

As I had hoped when I went to Morocco, I found many parallels between Moorish remedies and those of New Mexico. Often plants came into the United States from some part of the Old World, but the prickly pear, contrary to custom, was introduced into North Africa from the Americas. The Moors too, heat one of its flattened joints, split it open and apply it to any swelling on the body, and after the spines are burned off, the plant is fed to animal and is said to increase their milk. Moreover, it is commonly planted to provide quite a formidable rampart about their agrarian villages.

Enthnobotanical excerpt from 'Healing Herbs of the Upper Rio Grande' — L.S.M. Curtin, Laboratory of Anthropology, Sante Fe, N.M.

SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XV June-July, 1961 No. 6

Pediocactus knowltonii
sp. nov. Benson 1961
showing the fruit

REG MANNING

SAGUAROLAND BULLETIN

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W. HUBERT EARLE, Editor

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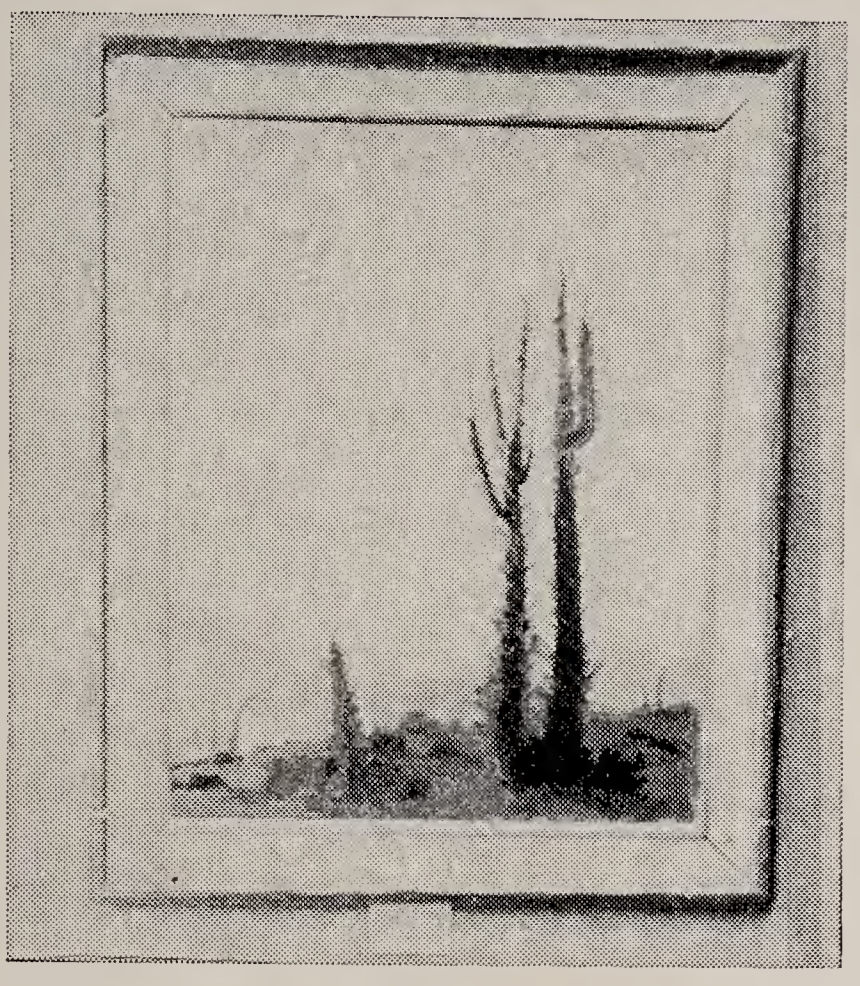
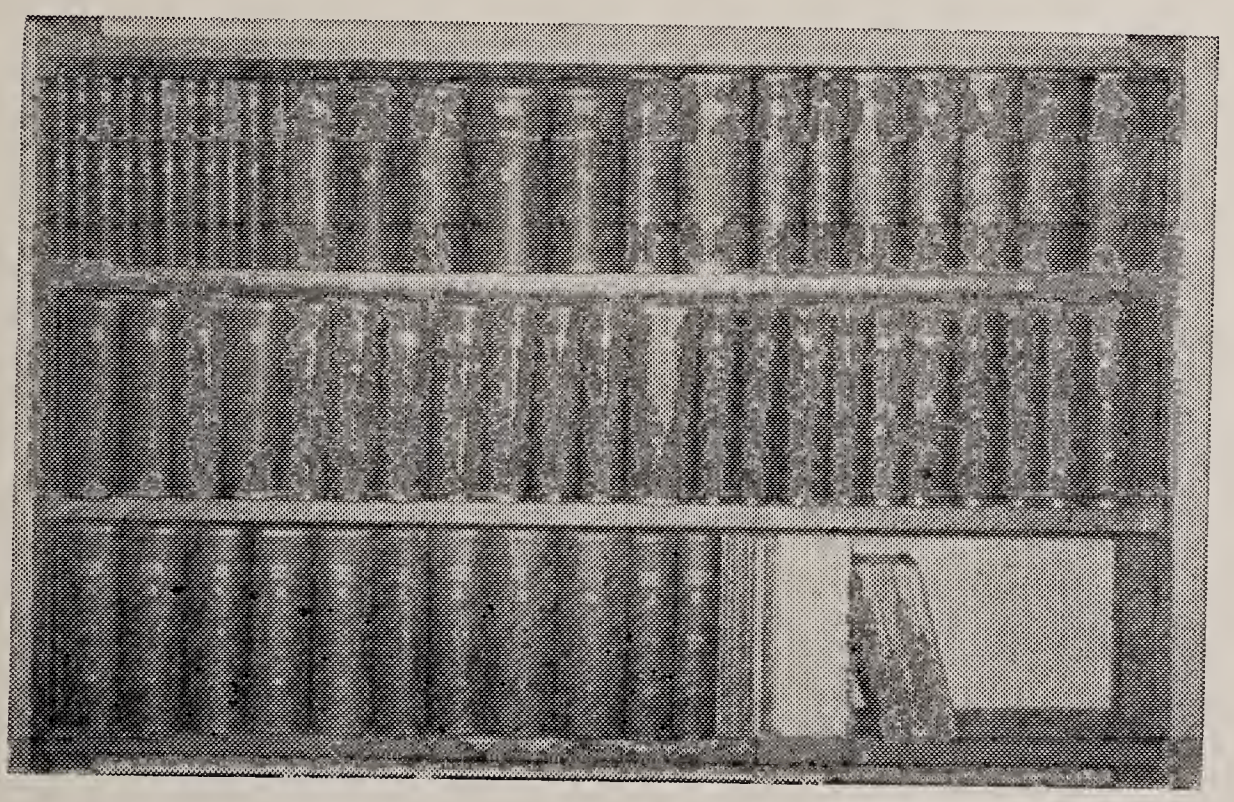
RECENT GIFTS TO THE GARDEN

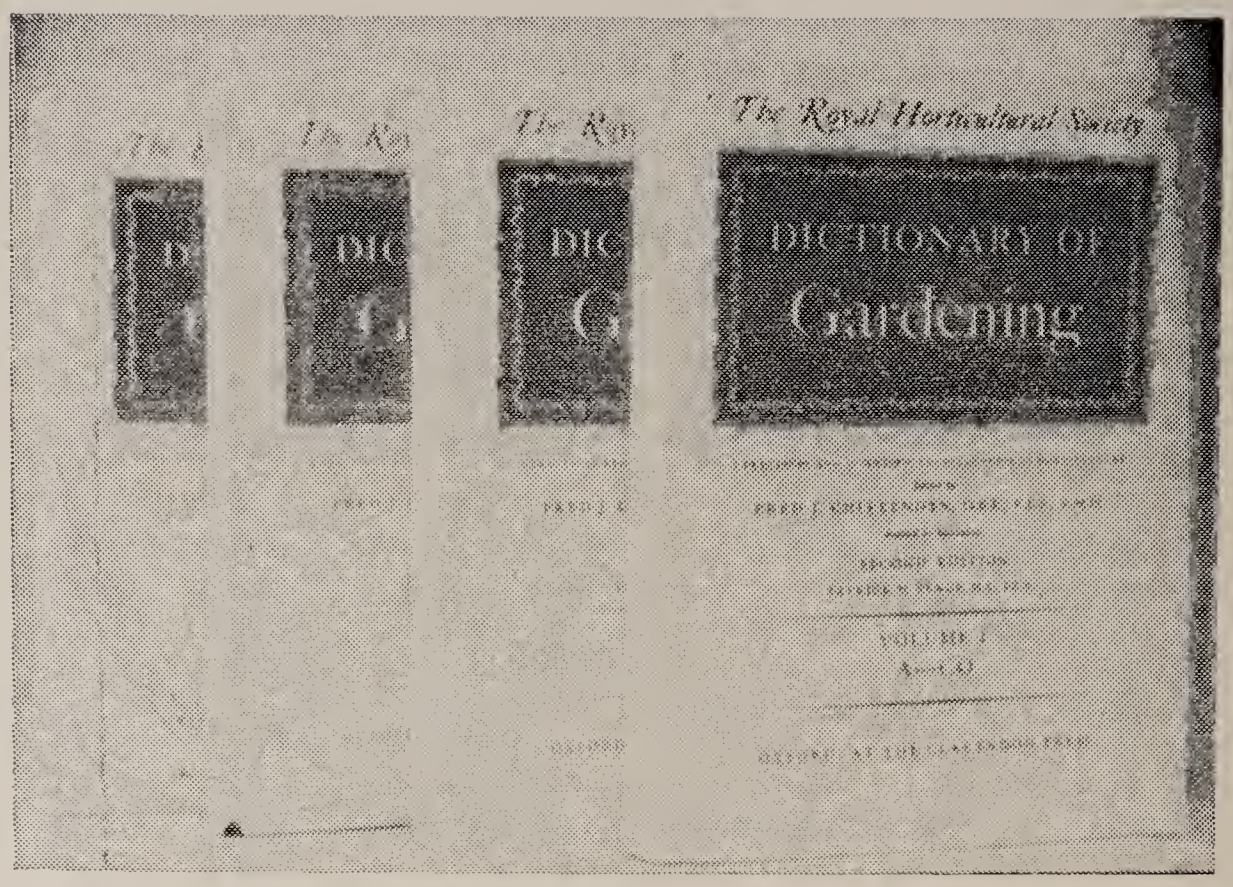
The Garden has been the recipient of many wonderful gifts the past year. Pictured on this and the following pages are a few that we would like to share with you.



"LAND OF THE CIRIOS" a 36" x 44" oil, painted and presented by Mr. John W. Hilton, 29 Palms, Calif.

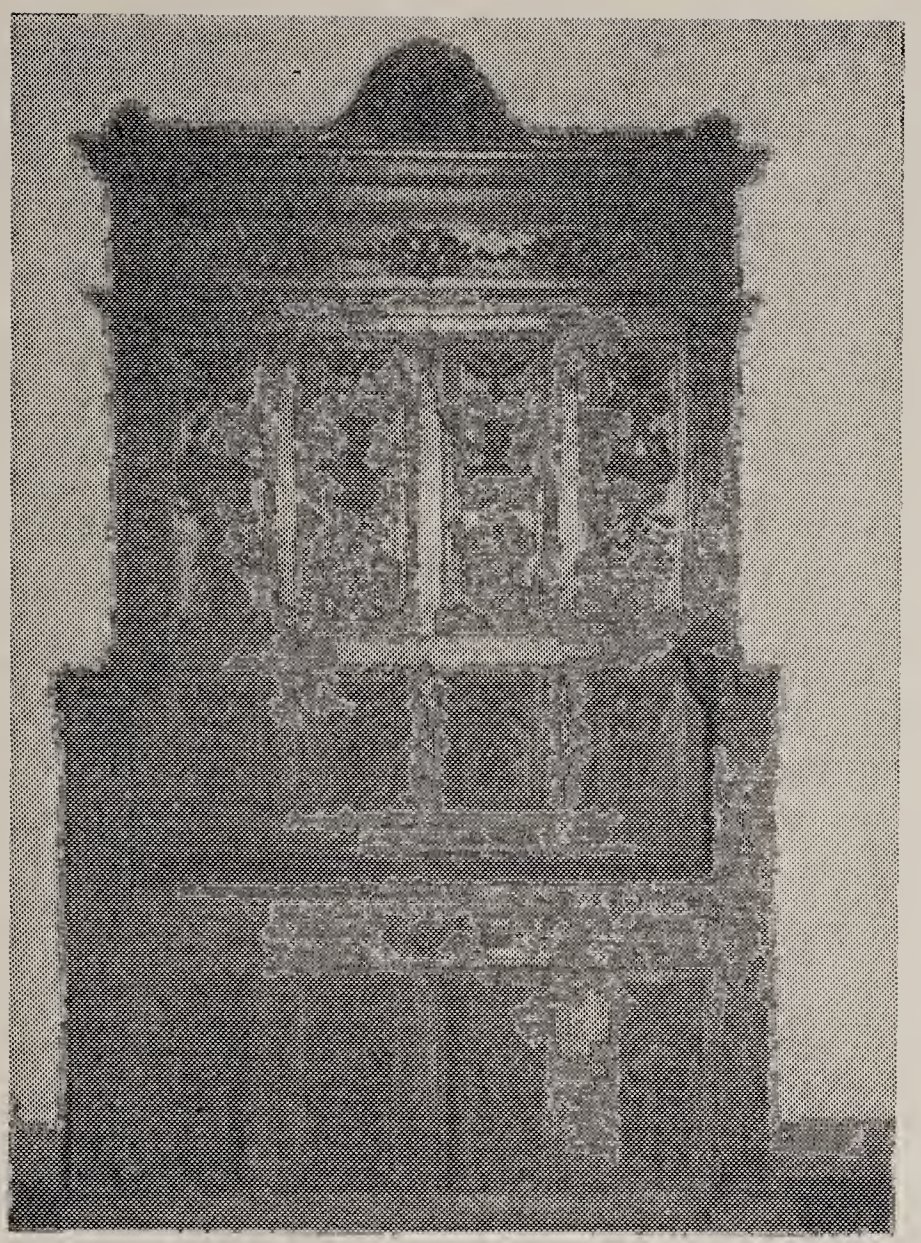


11 Volumes of BOTANICAL ABSTRACTS: 49 Volumes BIOLOGICAL ABSTRACTS and 5 Volumes, Standley, TREES AND SHRUBS OF MEXICO donated by M. C. Richter, Santa Barbara, Calif.

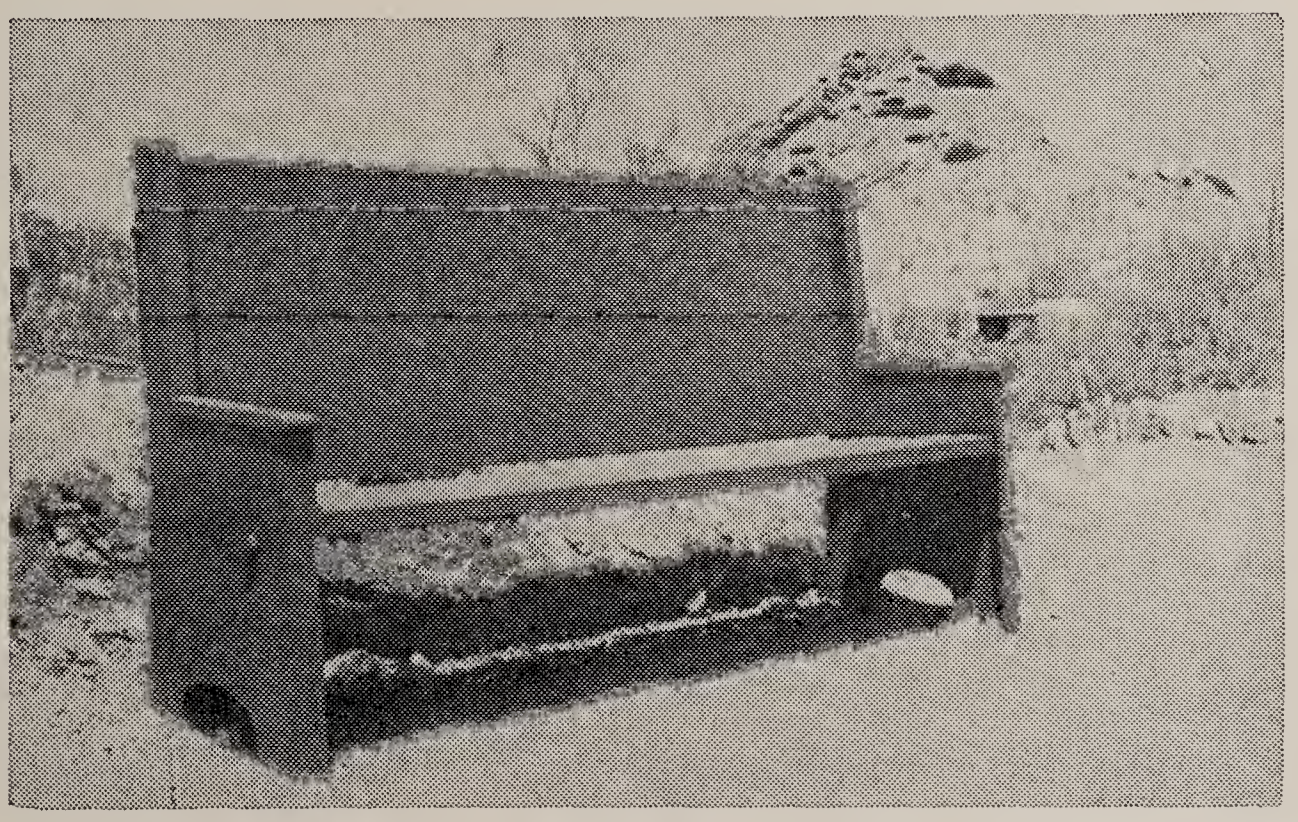


4 Volumes, Royal Horticultural Society — DICTIONARY OF GARDENING given by Mrs. J. Norman Henry, Gladwyne, Pa.

A portion of the new 200 car parking lot graded and packed by Arizona State University.

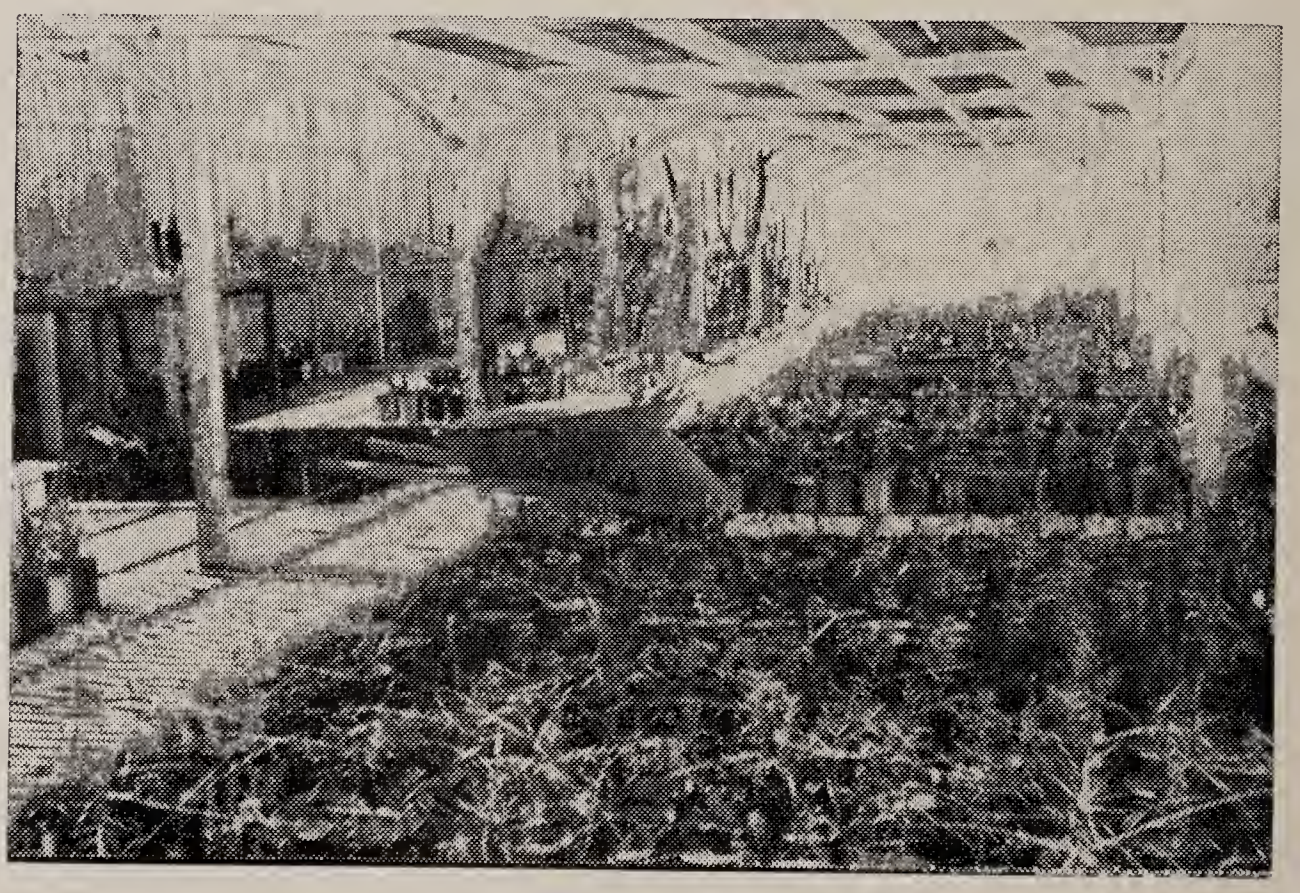


A monastery "waiting" bench from the estate of Miss Helen Brinton, Tempe, Ariz.



One of six benches given by Heath Bench Advertising Co., Phoenix, Ariz.

Arizona Flora Trail paths rebuilt through donation by Mrs. G. Eliot, Phoenix, in memory of her husband — Wm. Eliot, former counsel for the Garden.



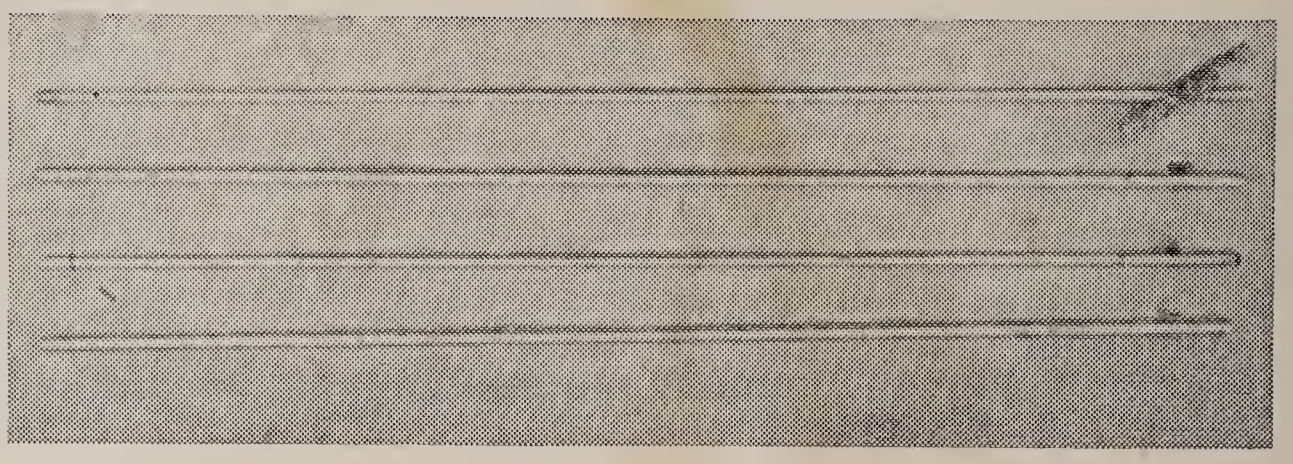
12' by 80' addition to our propagation area built this spring through an anonymous donor.

PLANT OF THE MONTH

The YELLOW PRICKLY PEAR (Opuntia phaeacantha) is either a low sprawling or a low erect plant ranging from California to western Texas and from Nevada, Utah, and Colorado to northern portions of Mexico. The large yellow blossoms appear in April and May and are followed by delicious fruits that are used for the making of preserves, jellies and candy.

SEED COLLECTING IN MEXICO

Mr. Brooks Darlington, Scottsdale, and your Editor, spent a week camping and collecting seeds in Sonora, Mex. The weather was quite cool this year along the coast which made collecting quite pleasant. This coolness caused the coastal fruit to be quite late in ripening, whereas those 30 miles inland were over-ripe. This erratic pattern or ripening makes collecting quite uncertain and expensive.



This year the Garden devised the above four 5'-0" aluminum rods so that when they telescope into each other, and are bolted, will make a 20' light-weight rod to remove fruit from the tall arms of many species of Cerei.

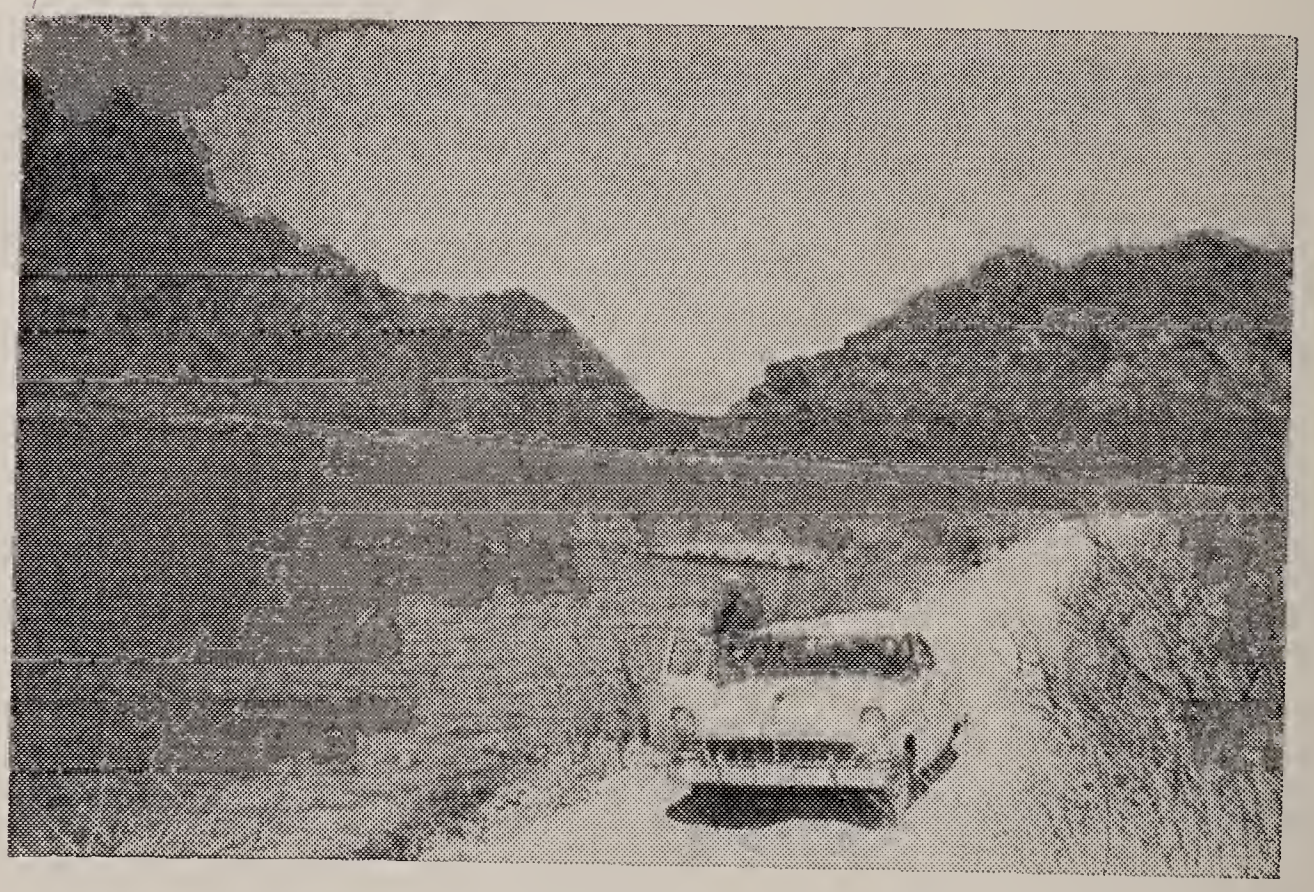
Three lengths of rod being used to remove fruits from *Lemariecereus thurberi* by Brooks Darlington.

Only the lower fruit can be reached on a tall *Pachycereus pecten-aboriginum.*

The golden chestnut-like fruit of *Pachycereus pecten-aboriginum.*

A large clump of *Lophocereus schottii.* These robust plants usually bear only a few red fruits each year.

A large cluster of *Ferocactus herrerae* east of Navajo, Sonaro, Mex.



San Carlos Bay, 18 miles north of Guaymas, Son. The hill sides, running down into the sea, are well covered by *Pachycereus pringlei, Mam. sheldonii, Echinocereus scopulorum, Lemaireocerus thurberi, Lophocereus schottii* and many other xerophytic plants.

NEW, NEW MEXICO STATE PARKS

CITY OF ROCKS State Park, 30 miles north of Deming. In the foreground is the Cactus Garden, designed by State Parks Director James L. Dillard.

Site of PANCHO VILLA State Park, Columbus, N.M., to be built this year. Mr. Wm. C. Hendrix is shown standing on the area set aside for a Botanical Garden.

CACTUS BEAUTY

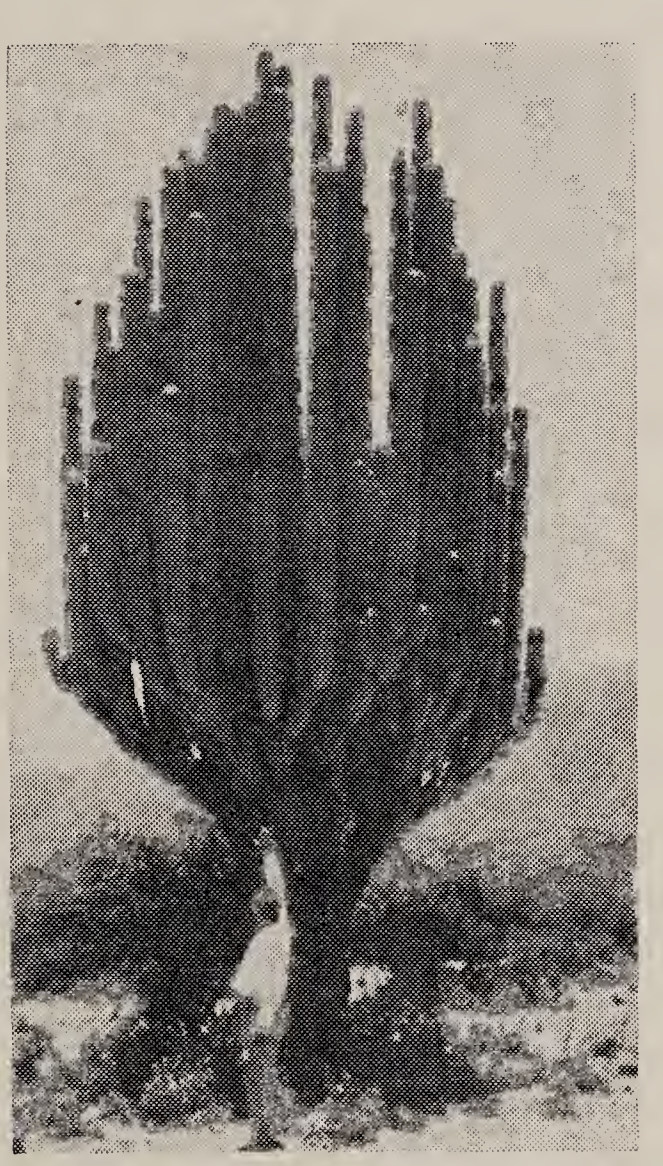
The touch-me-not beauty of cactus
Entrancing as it seems to the b'holder;
'Tis a beauty to watch —
And not to touch
By the hands, or be fondled or abused.
A selfish plant and the proudest of all;
Just a sight to behold —
But not to hold.
Please, just look and love me at a distance,
Fo that's what God has ordained me to be;
Love me but keep away —
For my thorns may
Hurt your hands, your arms, your lonely heart;
But you'll just have to learn to love me and
Admire at a distance;
That's a cactus romance.

From — THE ECHOES OF CACTUS LAND (unpublished)
by Chris Lao, Scottsdale, Ariz.

SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XV Aug.-Sept., 1961 No. 7



'I do not believe it' — writer viewing huge *Lemaireocereus weberi*. See p. 79

REG MANNING

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TACHARDIELLA LARRAE

COCCIDAE family

LAC SCALE

By John Weber

DESCRIPTION:

Tachardiella occurs singly or more often in crowded masses. It has a nearly globose body, 2 mm. in diameter. There are no antennae or legs in the adult scale, only lac tubes and an anal horn being in evidence. The lac is a resinous secretion that encases the scale and the twig as well. It is a clear reddish material and serves to hid and protect the insect.

The young free moving crawler inserts its beak into the plant tissue and becomes stationary. It grows and along with adjacent crawlers secretes the resinous lac which encases them. After three months most of the crawlers develop into adult females contained within cavities in the resin. The males emerge, fertilize the female, wherein the eggs mature. The female scale dies, the eggs hatch, and the crawlers escape and spread to uninfested portions of the plant.

This species is abundant on Creosoebush and **Tachardiella fulgens** infests **Courtsetia, Mimosa,** and **Prosopis,** but not in sufficient quantities to be of commercial importance. The resin was extracted and used by the Indians for waterproofing baskets, backing of their bows, and repairing vessels. **Laccifer lacca,** a close relative, is the source of commercial shellac.

DISTRIBUTION:

Tachardiella larrae is most commonly found along the Colorado river in Arizona and California. From the Colorado and Mojave deserts it extends into the Sonoran desert of Arizona and Mexico. **Tachardiella fulgens** is found in Arizona and Mexico.

DAMAGE:

There seems to be a strong host specifity in this group and damage is not extensive unless there is a heavy infestation. Because of the commercial value of some of the lac scales, the group as a whole has been considered beneficial.

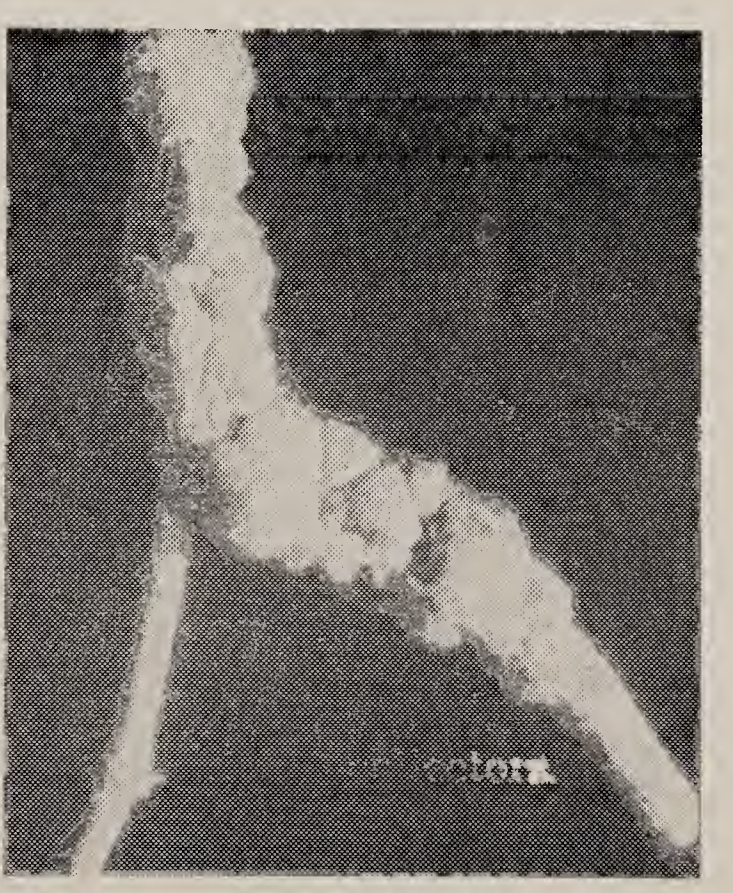
CONTROL:

Control can be attained by hand pruning where infestation is not extensive or by the use of heavy grade oil emulsion sprays. Oil sprays should not be used when temperatures are over 80° or when humidity is low. It would be best to precede spraying with an irrigation.

REFERENCES:

Essig, E. O. — Insects of Western North America.
Essig, E. O. — College Entomology.

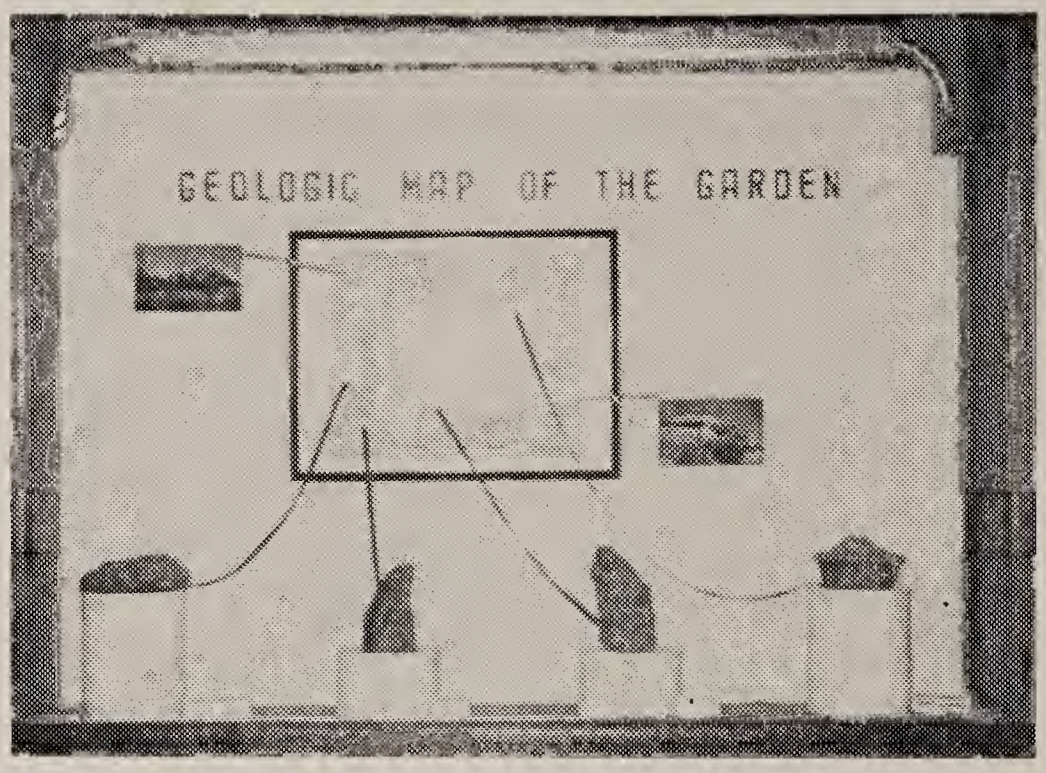
Tachardiella larrae X1½



Creosote lac scale

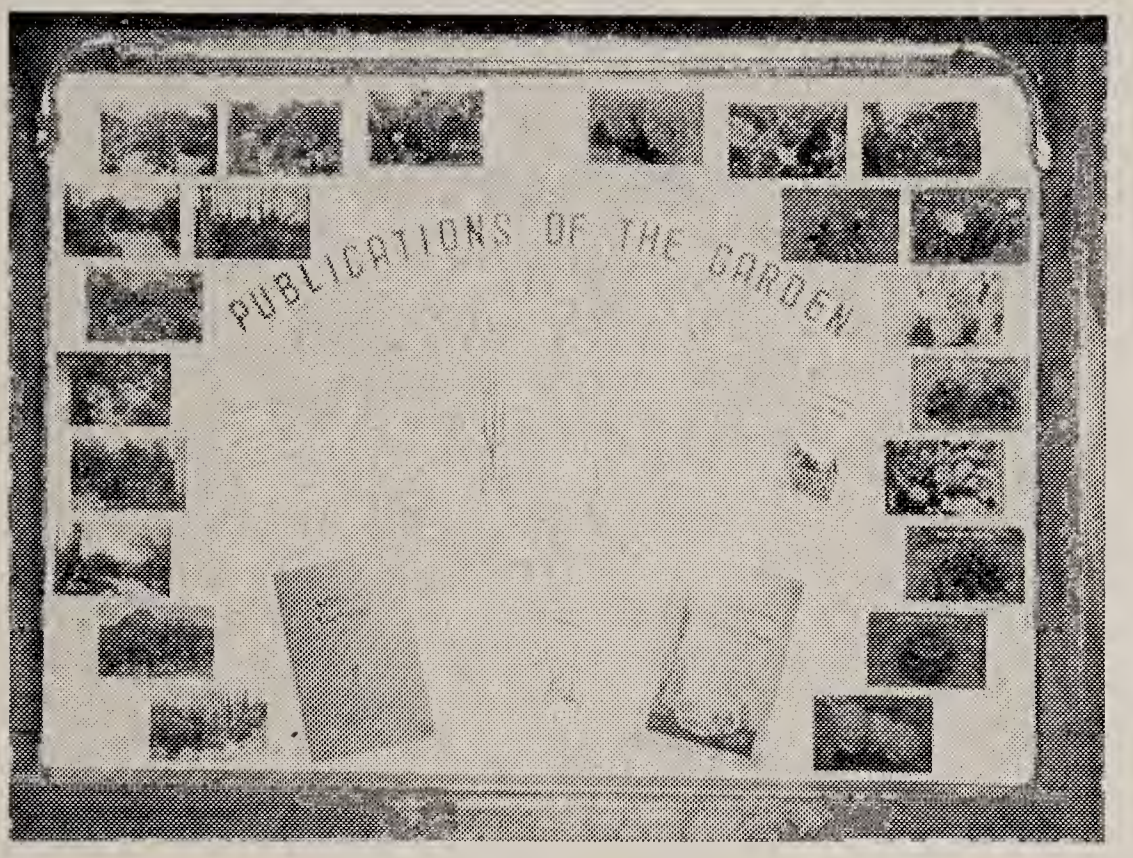
DISPLAY CASES

There are seven 36" x 48" display cases in the walls of the new Visitor's Reception Building. These displays are changed periodically — four of which are shown on this and the following page.



Rock and mineral formation in the Garden.

White thumb-tacks denote the countries wherein some of our foreign members are located.



Display of Garden publication and post-cards of the Garden.

This creates quite a bit of interest with stamp collectors.

PLANT OF THE MONTH

APRICOT PRICKLY PEAR, *Opuntia fusegi*, is a native of California and is found growing in dense stands in the San Bernandino Valley. This low, sprawling, bushy plant is covered with deep-salmon to red-salmon blossoms in April and May. The predominate color is a dark apricot followed with a few purple colored fruit.

CONFESSIONS OF A CACTOMANIAC (J. G.)

By Brooks Darlington

You're going along normally, with no more foibles or eccentricities than average.

Then you begin to find yourself making excuses for skipping social engagements. You avoid office routine whenever possible. You begin talking a jargon foreign to your uninitiated friends. Later, you begin to notice a strange restlessness whenever you are either puttering about the place or dashing off in search of a new specimen. Finally, you develop a glint in the eye and sores on your fingers from buried barbs, and at last you realize you are "hooked."

That's the insidious thing about cactomania. You are never quite sure when or how the virus set-in, nor the heights to which the fever will soar. You only know that you have entered a world apart from those not so victimized; that you might get over it someday but hope you won't.

In my own case, the incipiency of the disease probably can be traced back to the time I discovered a night-blooming cereus, "Arizona Queen of the Night," on my 5-acre residence lot, a desert plot on the low slope of Camelback Mountain with open spaces simply yearning to be dressed up with native flora. The startling beauty of the blooms in contrast with such unobtrusive and even straggly-looking stems must have started a sort of chain reaction, for I soon began to drag in shrubs and cacti from nurseries, from the desert and from homes of friends, to plant in the wide open spaces between the creosote bushes.

Anyway, a "collection" of a sort started to take shape, characterized by its profusion if not by any design or orderly plan of development. Hence, after several years of leisure-time effort during which the mounting fever was gradually winning more and more time from other pursuits, your correspondent decided to go all-out. This involved converting the place into what sympathizers were already calling "Brooks' Botanical Garden" and non-sympathizers referred to as "Darlington's Bramble Patch."

So it was that, shortly after dumping some fifty truck-loads of decomposed granite (for cactus beds) and large boulders (for aesthetic effect, if and when properly arranged), the opportunity arose to take off for Mexico on a unique cactus safari.

How lucky can a neophyte cactomaniac get? A convention of the Cactus and Succulent Society of America in Mexico City provided not only an opportunity to see that section of our neighbor but to inspect under expert guidance and tutelage natural habitat areas constituting the most lush and varied displays of cacti in all the world.

Finally, to make it the really dream trip for a fledging cactomaniac, the journey was to be made in company with three congenial companions who not only know cactus but also the highways and by-ways of Mexico, including the places where species that are 'collectors' items elsewhere could be found growing in startling profusion amongst settings of great natural beauty.

So at a ghastly hour on the morning of July 8th, Mr. W. Hubert Earle, Director of the Deeert Botanical Garden and chief shepherd of the cactomaniacs in this area, drove into the 'bramble-patch' to pick up his fourth passenger. With him were his charming wife, Lois, and Mrs. Hazel Johnson, a widely-travelled writer on cactus subjects, who with her husband, Harry, own a large cactus nursery at Paramount, Calif.

Our initerary called for journeying to Mexico City via the central route

which mostly stays at higher elevations and is very scenic, returning by way of the west coast route. Clearing the port of entry at Ciudad Juarez with little difficulty, we were able to make Chihuahua for the first overnight stop.

This estimable periodical is primarily a cactus journal, so we are not going to throw a travelogue at you here. Particularly since many readers are undoubtedly more hep to Mexico than your present author, this being his first venture as far south as the nation's capitol. However, it's always of interest to learn how fellow-travellers fare in a foreign country, so we will go on record here and now as saying that we found the roads excellent; the accomodations not only satisfactory but often intriquing; the food on the whole most palatable; and the service . . . well, Mexican.

Leaving Durango on the morning of the third day out, we stopped at a 'wonderland of rocks' on a grassy hillside at about 7,000 ft. elevation, chief pilot Earle invited his passengers to snoop about for specimens he knew to be native to the region. At first the huge tree prickly-pears were the only cacti to be seen. But prowling about in the long grass and scrambling over piles of boulders began to produce its succulent rewards. **Mammillaria magnimma and M. bella** were found; the former often as big around as a saucer, the other more dainty; both marvels of adaptation to their environment.

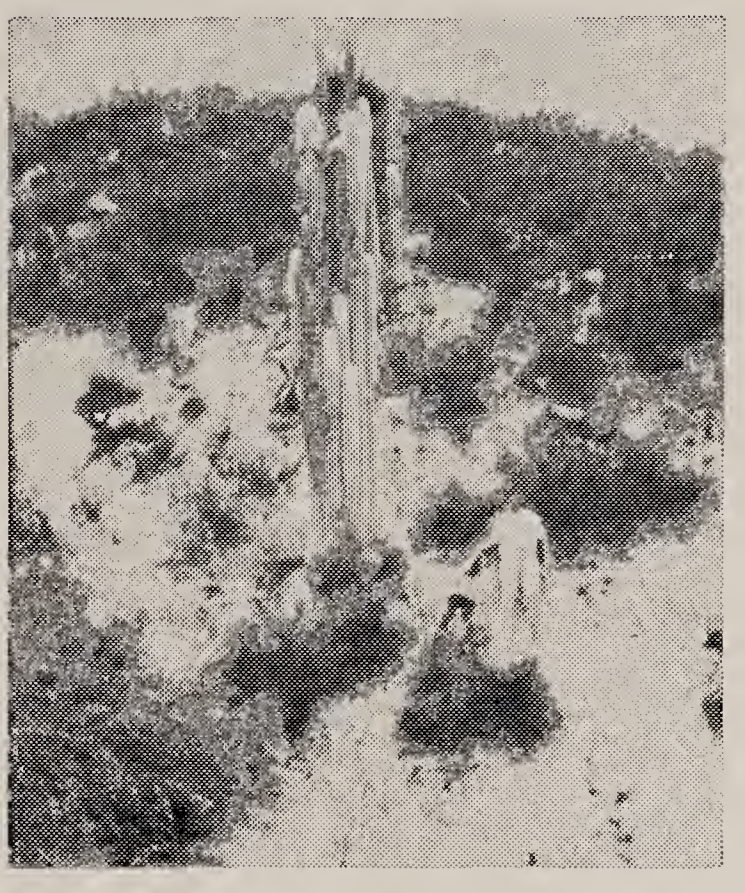
This also applies to the occasional Coryphanthas and Echinocereus found in that section. Not only did the hues of all these cactus blend with the rocks and grass as if for camouflage; they were so deeply imbedded their flat faces were almost flush with the suhface. Sometimes 90 percent of the bulk of the plant appeared sunk into the ground or hidden away under edges of rocks or shrubs or clumps of grass. In addition to their beauty of form, their infinite variety, their astonishing hardiness contrasted with delicate beauty of flower, it is the amazing degree to which cacti adapt themselves to their environment, and the variety of ways they do so, that makes the stickery little devils so intriguing.

As we travelled south, the road stayed mostly at an elevation range between 5,000 and 8,000 feet but the forms of cactus and succulents to be seen increased in size as well as abundance.

Upon one exclaiming at the towering, many-branched and heavily-foliated yuccas that began appearing, old-hand Earle explained that they were mere striplings of the **Yucca australis** and that the grown-up members of the family would be encountered still

further south. This observation also was forthcoming with regard to the 'cordons' (**Pachycereus pringlei**) that had taken over where the 'Saguaros' left off, and later to the odd-shaped but beautiful **Yucca beaucarnea** with their huge swollen trunks at ground level. So much so that we began to accuse our guide and mentor of being in the pay of the Mexican Tourist Bureau. But by my glochids, though it seemed improbable, he made good on his proud boast. The hayseed who got his first look at an elephant and said "There's no sech animal" would have a similar comment concerning the gigantic forms of cacti and yucca to be seen in the lower parts of Mexico.

Near Guanajuato, a charming Spanish-colonial town straggling through a huge ravine, we stopped for lunch and pictures in a veritable cactus fairyland. Notable were the organ-pipe cactus (**Lemaireocereus stellatus**) and the **Myrtillocactus geometrizans**, from the latter the natives were gathering the small edible fruits (garambullos), but for sheer beauty it would be hard to match the erect and stately **Lem. dumortieri** with its bright silver-gray color contrasting with the darker greens of the underbrush and the other cacti. As for the smaller but none-the-less fascinating species, there were places along the roadside where it was literally impossible to walk for any distance without stepping on these low-growing plants.



Clustered 'Old Men' *Cephalocereus senilis.*

Dudley Gold and Dr. Helia Bravo.

Being almost totally uninitiated on the vast ramifications of nomenclature and other scientific aspects of cacti, your scribe planned to sneak out of any technical sessions at the Convention to see some of the tourist sights in Mexico City. But it so turned out that with great and good wisdom (as far as those of us who are not botanists are concerned), the affair instead featured trips into the country-side where nature provided a natural cactus laboratory of unparalleled appeal. This included a visit to the Botanical Garden at the University of Mexico, under the able direction of Dr. Helia Bravo.

One of the highlights was a bus trip to Venados, the Valley of the 'Old-Man' cactus and a visit to the estate of Senor Hernado Sanchez-Mejorada, a leading

Conventioneers enjoying the Valle de Venatos, home of the 'Old Men Cactus,' that can be seen on the steep hillsides.

member of the Sociedad Mexicana de Cactologia, A.C., the Mexican equivalent of our local and national cactus groups. This would have proved a breath-taking experience even to anyone who had no interest in cactus beyond learning how to get rid of a cholla burr.

Lining the steep rocky hillside of this magnificent canyon are true forests of the unusual and picturesque 'Old Man' with its shaggy outcroppings of long whitish-grey 'hair' straggling down from its top.

We'll spare you any more purple prose on the Valley of Old Men, because you really have to see it and even then (like this hayseed) you may not believe it. Except to comment that the 'Senilis,' while certainly the predominant feature of the area cactus-wise, nevertheless was only one of about 10 species found in the area, all in sensational sizes, shapes and abundance. **Mammillaria gemnispina**, for example, occurred in clumps of several hundred plants, projecting almost

John Haag of Tucson (with hat) measuring a small barrel, *Echinocactus ingens.*

Coryphantha erecta in foreground. The large white clump of *Mammillaria gemnispina* is bearing about 250 heads.

straight out from 45 degree slopes. The grotesque barrels, **Echinocactus ingens,** dwarfed our visitors. **Dolicothele longimma** was hidden under yellow blooming **Cassia wislizenii** bushes, **Coryphantha erecta** stood up like small 'Tenpins.'

Another rewarding trip was to Tehuacan, aptly described as the "heart of the cactus country." A two-day bus journey with an overnight stop at the famous mineral springs spa of Penafiel, provided ample opportunity to verify the truth of this claim. Growing like pine trees along the steep but heavily vegetated hillsides in that region are (among others) the huge **Cephalocereus hoppenstedtii, C. chrysacanthus, Lemaireocereus chende, L. tetetzo, L. hollianus, L. dumortieri, L. weberi, L. stel-**

A forest of *Cephalocereus hopenstedtii,* 25 miles west of Tehuacan.

A large *Lemarieocereus weberi* found 30 miles S/E of Tehuacan. For comparison of size, note two men at right side of trunk.

latus, Neobauxbamia ruficeps and growing in and among these towering specimens of the cactus family were **Echinocactus grandis, Ferocactus robustus, F. echidne, F. flavovirens, F. recurvus, Mammillaria conspicua, M. carnea, M. viperina** and many species of Opuntia.

We were especially intrigued with the many species of 'pin-cushions' and barrels mounded up into clumps that simply bugged out your eyes. Also, magnificent examples of the centuries old Beucarneas. Some were 15 to 20 feet tall with alligator bark that measured 18′ in circumference.

On our return trip (via Guadalajara, Mazatlan, Alamos, Guaymas and Nogales), we encountered still other cacti indigenous to those particular regions. Among these, found mostly in the State of Sinaloa, are **Rathbunia kerberi, R. alamosanus, Pachycerereus pectin-aboriginum, Lemaireocerus montanus, L. thruberi** and **Cephalocereus alensis.**

What jogs the memory most persistently, however, was the cactus forest alongside where we stopped for lunch north of Tepic. Amidst jungles of octopus cactus, organ pipe, and opuntias of many species, there stood out bright red streaks of color lying close to the ground. These turned out to be **Bromelia pinqguin,** a pineapple popularly called 'Heart of Flame.'

If he isn't a hopeless case already, it practically drives a true cactomaniac out of his mind to see such stands of rare cacti and succulents growing to the most improbable sizes and shapes and in unbelievable profusion, without being able to bring them back and plant them in one's garden.

Well, there's a lot of red tape to it, and the sizes one can bring in the U.S.A. are limited to one foot in heighth. Yet, if you want a newly-trained but enthusiastic guide to the wonderful world of cactus below the border, this writer is available. I can't think of a better reason (or excuse) for visiting that enchanting country and revelling once more in the breath-taking beauties of its countryside. And we still haven't seen the 'peyote' growing in its native habitat!

SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XV October, 1961 No. 8

Spanish patio
Cuernevaca, Mexico
See p.94

REG MANNING

SAGUAROLAND BULLETIN

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W. HUBERT EARLE, Editor

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ACACIA FARNESIANA

SWEET ACACIA

LEMGUMINOSAE (Pea Family)

HUISACHE

By John H. Weber

DESCRIPTION:

Acacia farnesiana assumes the form of a much branched, spiny shrub or small tree. Spreading or drooping branches form an expanded crown. Straight white spines are abundantly scattered along the branches as well as the trunk. As a tree it attains a height of six meters with a basal trunk diameter up to thirty centimeters. The leaves are bipinnately compounded and from five to ten centimeters in length. There are three to six pair of primary pinnae, each having ten to twenty five pair of leaflets. In shape, the glabrous leaflets are linear-oblong, being three to six mm. long and about one mm. broad. Deep yellow flowers occur in large, globular, dense heads about one cm. in diameter. These most fragrant flowering heads may be present from April to November. The hard seed pod is turgid and almost terete. It is six cm. in length and one cm. in diameter and on ripening is dark brown and purple in color. The pod is late splitting, frequently not releasing the seed at all. A close-grained hard wood is produced having a brownish-red to yellowish color with a specific gravity of 0.83.

Same seedling 2 years later—
11' tall

Seedling *Acacia farnesiana*
5' tall, 16 months old.

DISTRIBUTION:

Sweet Acacia ranges from Texas, Arizona, and California south throughout

Acacia farnesiana flower—X¾

Mexico into Central and South America. The plant is presently disseminated in the tropical and subtropical regions of both hemispheres. It has become well established in the Hawaiian Islands and is grown for commercial use in France. Locally it extends from Mexico into Sycamore Canyon at Santa Cruz county and into the Baboquivari mountains of Pima county. **Acacia farnesiana** is found growing on hillsides and in canyons at an elevation from 3,500 to 5,000 feet. It is found in association with other plants of the Desert Grassland and lower Oak Woodland.

UTILIZATION:

The normal growth habit of multiple branching from a short trunk renders the Huisache particularly adaptable for screening purposes. If it is installed in a close and staggered planting of several rows, it will produce a dence, fast growing screen affording considerable privacy. If it is pruned and trained into a flat top spreading tree, Sweet Acacia will impart sufficient shade to protect tender leaf succulents and cacti from the intensity of summer sun. Aside from functional uses, the species has value as a flowering tree. The flower often matures in April while the tree is still deciduous and prior to the flowering of most other trees and shrubs. This creates the pleasing effect of a mass of golden puffballs mounted on barren branches and stems. The plant might well be installed with an enclosed patio or near a window to benefit from the scented perfume exuded by the flowers.

CULTURE:

Spatial requirements are not extensive as an area of twenty feet is adequate for the spreading crown. A full sun exposure is desirable. For optimum growth a deep well-drained soil and weekly deep irrigations during dry seasons should be provided. A mulching with barnyard manure would be beneficial.

Acacia farnesiana fruit—X⅔

Acacia farnesiana (Sweet acacia). A 12' tall tree, 11 years old.

PROPAGATION:

Sweet Acacia possesses an impermeable seed coats rendering pretreament necessary. Sacrification of the seed coat results in rapid germination. The seed may be pretreated also by soaking in hot water for 12 to 24 hours or in concentrated sulphuric acid for t wo hours. Viability of the seed is long, but many become infested with the larvae of Mylabris (bean weevils). The adult beetle lays its egg on the pods and on emergence the larvae penetrates the pod and seed therein. Propagation can also be achieved by using cuttings of half ripened wood taken with a heel. Growth rate is quite rapid, an eight foot tree resulting from three years growth from seed.

AVAILABILITY:

Acacia farnesiana is in stock in major California and Southwestern nurseries.

REMARKS:

Huisache has minor value as forage to livestock and wild-life. Tannic acid, ink, and mucilage have been extracted in small quantities from the plant. The major commercial value is derived from the production of perfume from the flower. The cassia flower is grown for commerce in Grasse, France, and a single annual harvest has amounted to as much as 100,000 pounds of flowers. It is small wonder that this plant in bloom attracts so much comment by visitors.

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Little Elbert L. — **Southwestern Trees.**

Standley Paul C. — **Trees and Shrubs of Mexico.**

PLANT OF THE MONTH

Birthday-cake Pincushion (Mammillaria pentacantha) is a native of central Mexico. It is an easy plant to grow and is found in many collections. Its circle of small flowers causes much comment.

GARDEN IMPROVEMENTS

The past summer, our Student Horticulturists, Demitrios Vlachos and Terry Truesdell, have worked hard to widen the paths adjacent to the Webster Auditorium. Native rock has been cemented along the beds.

The newly widened paths will take care of our increased attendance. All paths have been black-topped to insure continued neatness of the Garden.

YUCCA
SOAP ROOT
SPANISH BAYONET
SPANISH DAGGER
SOAPWEED
OUR LORD'S CANDLE
PALMILLA
AMOLE
DATIL
LILY FAMILY

Yucca baccata Torr.
Yucca glauca Nutt.

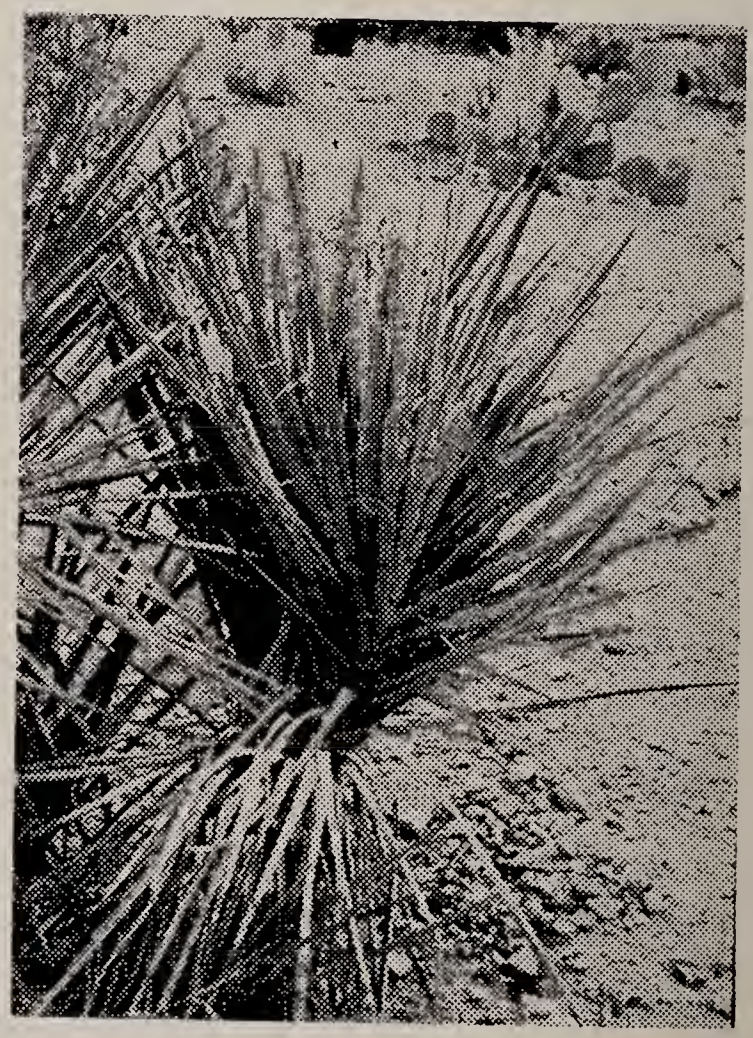
Liliacae

I have always been grateful for the yucca, a plant without parallel in its lonely habitat of rocky slopes or arid plains, seldom blessed with rain, where it blooms in towering shafts of white-flowered beauty. Little wonder that its blossoming stalks have been called "Our Lord's Candles", for they stand in a patch of sun like a lighted offering before the storm-darkened skies of summer. The low, bristling clusters of sharp-edged arrowing leaves are truly a forbidding nest for so remarkable an egret of bloom, but they nevertheless serve as a formidable defense for desert survival.

Not all yucca is a dry-country plant. In swamp Louisiana, for example, it frequently grows ten feet high on a sandbar beside brackish water and may have a stem five inches in diameter.

Before other forms of soap were common in New Mexico, pounded **amole** root was used universally by the inhabitants for all washing purposes, and by the Indians for purification and ritual cleansing as well. After having driven out the Spanish in 1680, they took to the rivers by tribes and shampooed themselves to remove the taint of baptism. With the resettlement, the Spaniards learned to use this root for laundry work, and especially for washing wool; nor has the custom been entirely abandoned since the wide-spread introduction of commercial soap.

The thick yucca roots, particularly of the species **baccata** and **glauca**, still are sought after, dug, dried, and stored



Yucca baccata, note threads along edge of leaves.

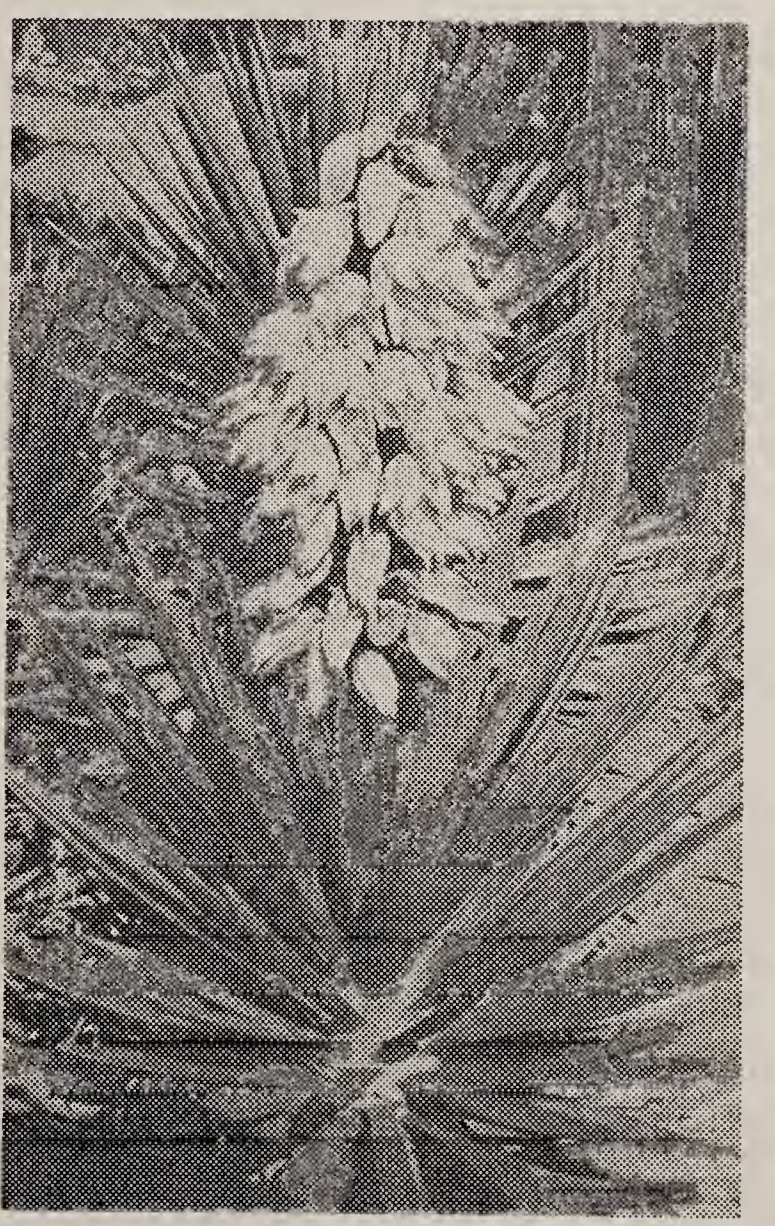
away. When needed, they are cut or chopped into small pieces, pounded, and soaked in cold water. An excellent lather quickly forms as the roots are stirred and kneaded by hand; the residue is removed, hot water is added to the cold and all is ready. The Indians of Arizona and New Mexico customarily wash their hair with **amole** before all ceremonies, and it may be this "tonic" that gives it such glossy luxuriance. Moreover, woolen blankets seldom are sent to the cleaner's, since the native laundress can make them much more fluffy with **amole.**

Various yuccas long have furnished fibers for many purposes. Archaeological remains of the Southwest Basket–maker and Cliffdweller cultures have revealed intricately-woven sandals of this material, as well as ropes, cords, belts, and mats. Even now, cincture pads, baskets, brushes for decorating pottery, whips for initiation ceremonies, brooms, cords for suspending watermelons or similar articles from the ceiling, and for tying bundles of herbs or ceremonial masks, all are made with its many fibers.

Nor is its utility limited to fibers, for American Indians include the fruit, flowers, and **datil** stalks in their menu. The fruit pods, which vaguely resemble a date in appearance, are boiled or roasted, and yield a very nutritious food, not unlike a sweet potato in flavor. They are also baked as a conserve. After being cooked in this way, the resultant paste is dried and stored away to furnish the future base for a beverage or for a syrup like molasses to be used as a sweetening. Even the flower stalks when full grown, but before the buds expand, are cut into section, boiled or roasted in the ashes, and eaten after the tough rind has been taken off. The flower buds, too, make a palatable vegetable, if boiled; and they serve as a welcome side dish to a diet all to monotonously composed of meat and beans. It is believed at Santa Clara pueblo that the fruit of one kind of **palmilla** is apt to cause diarrhea, and it has also been used to promote easy and complete delivery. At San Ildefonso, it is taken as a ritual emetic, the person first chewing it (probably the root) and washing it down with water.

An informant in Prado told me that **amole** made a good remedy for **purgacion** (gonorrhea). The roots are crushed and boiled in water. One cup of the warm tea is drunk three times a day for perhaps six day, or, she said with great certainty, "until the cure is effected."

Pablo, who sometimes acted as my Jack-of-all-trades, used to amuse me with stories of his childhood in the country, where he had no store–made toys. To replace the daisy chains of



Yucca aloeifolia is an excellent plant for ornamental use.

children elsewhere, he would string **palmilla** seeds on yucca fiber for necklaces.

On another day, when I was learning the various native ways of making cheese, my elderly teacher casually remarked that **palmilla** was substitued for rennet to curdle milk, "down San Pedro way, but," she added, "I found it really nasty."

It had been intimated to me that some mysterious preparation was used by the secret society of **Los Hermanos Penitentes** as a stimulant. But it was years before I learned, to my surprise, in a whispered conversation, that the same plant that furnishes the material for their scourges also provides the wine taken by the "brothers" before their penance. The **palmillas** (young shoots) are boiled, then mashed, and the juice is poured back into the steaming kettle, the hot water having been retained. It is cooked for an hour or so longer to increase its strength, and a red, wine-like liquid results. This is drunk to make them **"muy bravo y valiente."** If allowed to simmer several hours more, the wine becomes a syrup that is kept to rub on rheumatic joints.

Ethnobotanical excerpt from 'Healing Herbs on the Upper Rio Grande' — L.S.M. Curtain, Laboratory of Anthropology, Santa Fe, N.M.

FLOWER GARDENS IN MEXICO

Travelers from Mexico are always exhuberant about the splash of color that arises from within the walls of many Mexican homes. The patios may be full of blooming plants or vines, in flamboyant colors, may be inching their way along and over the high walls.

The gardens of Mexico are different to those found elsewhere in the world. The ancient cultures of Maya, Toltec, Axtec and then the Spanish have created a mosaic pattern called Mexican. Many of the famous old gardens were destroyed by the conquering Spanish and thus only ruins and memories remain as the only evidence of a cultural way of life.

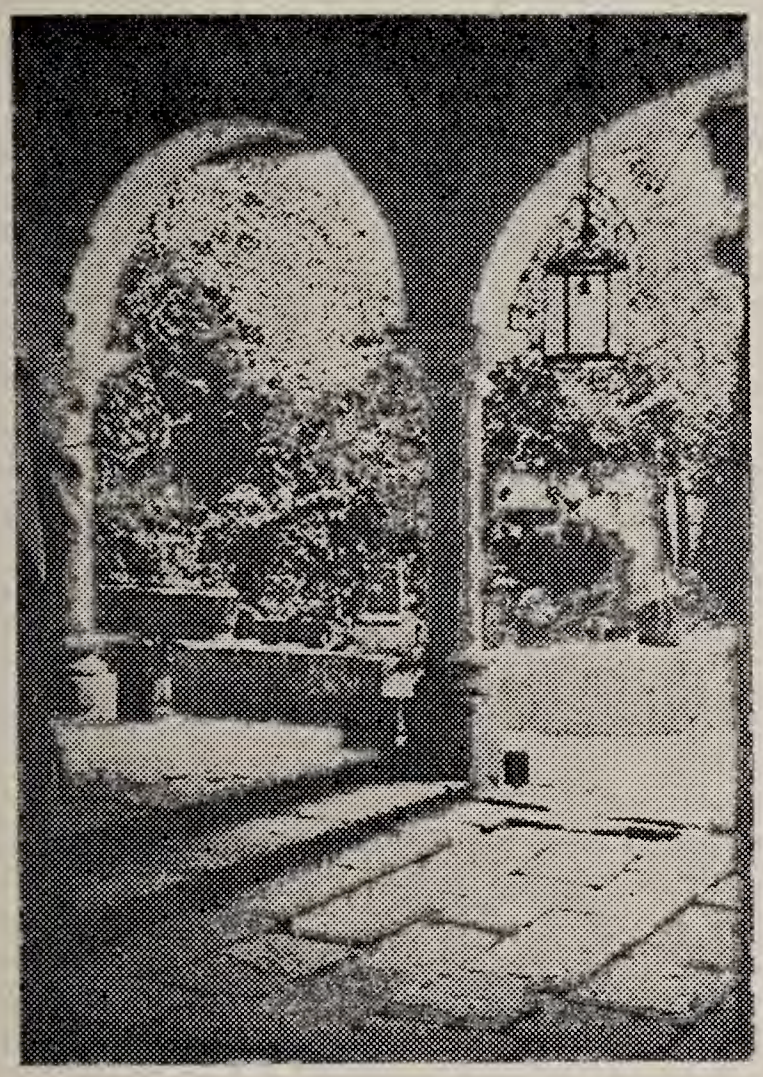
Excavations tend to set the golden era of the Mayas as about 600 A. D. They were conquered by the Toltecs (skilled workers) whose reign was ended in the 12th century by the Aztecs with the aid of various alliances of many semi-wild tribes. About 1520 A.D. Cortez approached and conquered the Aztec capital, Mexico-Tenochtilan. The following year the large temple to the God Quetzalcoatl was destroyed by the Spanish priests who then erected a Christian church over the destroyed pyramid.

The Spanish brought with them their ideas of architecture that their homeland had been absorbing from the invading Greeks, Arabs and Moors. Thus the Spanish introduced to Mexico a Baroquish architecture, when simplified, resulted in a "Spanish-Mission" type of building. The Spanish priests carried with them through Mexico and then into southwestern United States this form of architecture.

The Spanish were quite impressed by the courtyards, flower gardens and pools that were part of the Aztecs homes. The pools, many with a small running stream, helped cool the courtyard, its water was used for the plants, fountains played in the breeze and the aromatic odor of the flowers assailed one's nostrils. Indeed the Spanish felt that they had found a paradise and thus when building new homes they included a patio, open to the sky, that was the cen-

ter of the home. All rooms led thru arches to the opened patio, which became a delightful spot for family and social gatherings.

Today the tendency is to erect high walls joining the dwellings and forming a square encompassing a patio. From the street, these walled homes appear



A garden patio filled with plants.

quite dull and lifeless, but on entering through an ornate door, you are surprised to find bush and tree-roses, dahlias, frangipani, poinsettias of many shades, sweet-peas, zinnias, bush and trailing nasturtiums, calla lilies, stocks, snapdragons, marigolds, violets and lantana of many colors.

Hanging under passageway arches are usually many bird cages from which come a melody of notes at various hours of the day or night.

None of the Mexican flower gardens seem to have a color scheme but there seems to be a uniformity through the country. There may be large clay pots, painted of various hues filled with either gardenias, tree-ferns, banana, palm or orange trees. Smaller pots of geraniums,, hibiscus, tropical plants or roses are set here and there lending a certain charm.

Against the walls of the homes one finds espalier trees of apple, pear, peach or plum; vines of passion flowers, bougainvillaea, jasmine and climbing cactus. On top of the walls may be found highly colored or glazed pots filled with small cactus and prickly pear cactus that need very little watering.

In the crowded sections of the cities valiant efforts are made by the women, and the old men, to grow plants in colored pots, painted pots or cans or just large tin cans. These are set in the doorways, hallways and on the window ledges.

Each village or city has a plaza (zocala) in which the inhabitants congregate for band concerts, meetings, promenading or just resting. These plazas are criss-crossed with walks. Bordering these walks are brilliant displays of seasonable flowers, blooming shrubs and trees. Some of the most outstanding can be seen in Cuernavaca, Guadalajara, Guanajuato, Queretaro, Mexico City, Alameda and Chapultepec parks.

Newly planned cities, such as Ciudad Obregon, have provided vast parkways full of flowers. New subdivisions in other parts of Mexico are doing likewise.

Wherever the Mexican lives, if only for a short time, they have their flowers with them. One unusual example is that of the railway section-hand workers. They and their families live in railway cars set-off at 'sidings' for short periods of a week or several months. The women grow, in tin cans, many vines, asters, geraniums, nasturtiums, portulaca, etc. These cans are then hung on nails driven into the outside of the box cars. They are then taken down and rehung during the moving of the

box car to another 'siding.' The surroundings may be dirty and dusty but you will find unbelievable color on the side of their box-car homes.

There are a vast number of additional native plants of Mexico that should be introduced to the U.S.A. It is rather ironical to see the native wild dahlias bobbing their small 2" heads while in the adjacent garden may be growing cultivated dahlias with 10" heavy heads. The latter having been developed in the U.S.A. from that small wild dahlia.

The 'floating gardens' of Xochimico are a most unusual sight. History shows that they were started about 1350 A.D. by the Aztecs. They are located a few miles southeast of Mexico City in a lake with very little water which is interwoven with narrow canals that offers transportation for the marketing of the gorgeous flowers and vegetables grown on these 'islands'.

The gardens do not actually float but are 2' to 3' above the water level and are of a bog nature. Rows of tall willows (Salix bonplandiana), which look like Lombardy Poplars, border many of the islands. The black earth creates quite a contrast for the many white calla lilies which grow in abundance. The blue water-hyacinths fill many of the canals and are an aid in stabilizing these islands.

A trip by flower decorated boat through these islands is an unforgettable experience. Purple, lavender, red and pink stocks cover whole islands. Marigolds, poppies, geraniums, lilies, sweet peas, long-stemmed violets, chrysanthemums, pansies, roses, carnations and many other flowers abound for as far as you can see.

The next time you are traveling through Mexico you may find some centuries old town, and places of interest with names as follows and their meanings:

Xochitl—flower
Xochitla—flower place
Xochiquetzal — flower-quetzal-feather
Xochitecpancalli—palace of flowers
Xochitepanya—walled garden
Xochichinomcalli—Inlian's garden
Xochipilli—flower god.

Thus one can readily understand why flowers have played such an integral part in the lives of a people who have enjoyed their flower gardens for so many years. —W. H. E.

OCTOBER ACTIVITIES

Oct. 3—8 P.M. Cactomaniacs. Chas. Mieg, Europe.

Weekly classes and lectures will commence Nov. 2.

SAGUARO LAND BULLETIN

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New water-drinking fountain of rhyolite stone donated and built by John Houzenga.

REG MANNING

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NOTES FROM THE CORNER OF THE EDITOR'S DESK

The Garden's summer program was most gratifying. Through the foresight of the Board, the Garden was ready with its new refrigerated 'Visitor's Building' to welcome the summer visitors. This being the first time that the Garden had been open through July and August.

We had anticipated that 2000 visitors each month would be worth the cost and effort. But we had, by actual count, 4410 visitors in June, 3415 in July, 3717 in August and 4309 in September. Fortunately this was one of our cool summers with the temperature rarely getting over 115 degrees. Those who noticed the heat were able to 'cool-off' in our refrigerated building.

Many of our visitors commented that they had visited Phoenix in the past summers but had not been able to enter the Garden until this summer. Goodwill, sales and memberships increased accordingly. We are now advertising that the Garden is open daily 9 a.m. to 5 p.m. throughout the year.

Phoenix will soon be known as a year-round resort and we have a unique Garden to offer visitors that cannot be found elsewhere in the world. As always, admission is free.

Mrs. Harry Johnson, Paramount, Calif., Mr. Brooks Darlington, Scottsdale, Mrs. Earle and your editor had a most enjoyable motor trip to the Cactus & Succulent Society Convention in Mexico City during July. Our hosts, La Sociedad Mexicana de Cactologia, conducted the best convention ever experienced. Those, fortunate to attend, will never forget how friendly, kind, considerate and comfortable we were made in such a colorful country. May we again extend our thanks, to all concerned, for a job 'well done.'

Our fall program began October 3rd with a well attended Cactomaniac meeting. November will see our program in full swing. A schedule for November is on the back page.

This year we will present a series of eight lectures to run consecutively until the last of April each Thursday at 3 P.M.

Classes in a 'Better Understanding of Desert Plants' will begin Wednesday, Nov. 8th, to run six weeks. The winter series will begin January 3rd and the spring series March 7th. These classes will be on propagation and identification of desert plants, desert survival and field trips. Many persons have already inquired of these classes and we are expecting another large enrollment. These classes and lectures are always free.

In this issue and some of the past issues of the Saguaroland Bulletin you have possibly noticed several articles by writers from various parts of the country. We certainly appreciate these contributions and urge you to do likewise.

Just this week we had a request on how to germinate Opuntia seeds. Some growers get 2% germination, others 90%. How do you get good germination on your Opuntia seeds?

The Garden's Book Store Price List is included within this issue. In the list you will find books, cacti and other items of interest that you might wish to consider as gifts, especially as Christmas is near. Any purchases from the Bookstore will greatly benefit its operation.

OLNEYA TESOTA LEGUMINOSAE (Pea Family)

DESERT-IRONWOOD

By John H. Weber

DESCRIPTION:

OLNEYA is a monotypic genus having a single species OLNEYA TESOTA. It assumes the form of a large shub or tree with single or multiple trunks. Grey bark covers the spiny branches and the upper portions of the trunk. The crown is usually wide-spread and quite dense. In tree form it ranges from four to eight meters in height. Leaves are blue-green in color and compounded; the leaflets numbering two to ten pair. Normally an evergreen, Ironwood sheds its leaves whenever it is subjected to severe drought or to a heavy frost. Flowering commences in May and extends to July, this being contingent on location and local weather. A tree seldom flowers in a year following a profusion of bloom. The fragrant pea-type flowers range from white and lavender to purple in color and generally appear with the new leaves in spring. The corolla is 12 to 14 millimeters long with free and equal petals. Stamens are ten in number and the flowers are arranged in axillary racemes. Fruit consists of a short indehiscent pod containing from one to eight seeds. Ripening in August, the pod is two to seven centimeters long, brown, and thick-walled in structure. The brown oval seeds are ten millimeters long and nearly as broad. Maturing in late summer, the seed has a waxy coat and not the hard resistant testa found on seed of most desert representatives of the Leguminosae.

Olneya tesota blossoms ½X

DISTRIBUTION:

In association with Palo Verde (Cercidium sp.), Saguaro (Carnegiea gigantea), and burr-sage (Franseria sp.) OLNEYA extends from sea level to 750 meters (2400′) in elevation. It occupies warm locations on outwash slopes, benches, and foothills and in desert valleys and Arroyos. Substrate is a coarse gravelly or sand and rocky soil. In Sonora the soil seems to be one of high lime content.

Closely approximating the limits of the Sonoran Desert, Ironwood is found in southern Arizona, southeastern California, Sonora and eastern Baja California, Mexico. It ranges east in Arizona from Yuma into Maricopa, Pinal, and Pima counties to the lower Verde river drainage and to the vicinity of Tucson.

A 20′ tall Desert-Ironwood tree about 25 years old.

UTILIZATION:

Desert Ironwood as an ornamental is most commonly employed for its display of lavender flowers in spring and early summer. While making an effective screen, the slow growth rate of the plant limits its use for this purpose. Given adequate time for development, OLNEYA will provide partial shade over an extended area for planting those succulent plants not adapted to full desert sun. The large seed is a major food item of many small animals and the tree may be installed to encourage these small denizens.

Olneya tesota 18 months seedling, 26″ tall.

CULTURE:

OLNEYA requires a location free from killing frosts. It is so sensitive in this respect that it serves as an indicator plant for the placement of citrus groves. Soil should be a loose well-drained one to prevent water-logging. Water in excess of need, results in destruction of the plant. Light mulching of seedling trees with manure accelerates their growth rate.

PROPAGATION:

When sown in spring, fresh seed germinates well without pretreatment. Seed should be installed at a depth so that it can be covered with a layer of loose soil equal to its thickness. Light watering will prevent loss from rotting of the seed. Germination is rapid, but the growth rate is slow. Often it is necessary to fumigate to destroy infestation of beetles within the seed.

AVAILABILITY:

Ironwood is carried in stock by a few southwestern nurseries, mainly those specializing in desert trees and shrubs.

REMARKS:

As browse, OLNEYA has fair palatability for cattle and Big-Horn Sheep. The seed is edible to humans and when roasted has a peanut-like flavor. Major use of the plant has been for fuel, but limited application has been made for tool handles, arrow points, fence posts, and novelties.

Pod and seed of *Olneya tesota* 7/8X

REFERENCES:

Bailey, L. H.—The Standard Cyclopedia of Horticulture.

Benson and Darrow—The Trees and Shrubs of the Southwestern Deserts.

Dayton, W. A. — Important Western Browse Plants.

Jaeger, E. C.—Desert Wild Flowers.

Shreve, Forrest—Vegetation of the Sonoran Desert.

Woody Plant Seed Manual—Miscellaneous Publication #654 U. S. Forest Service.

One of the many grade school classes that tour the Garden throughout the school year.

Red Prickly Pear *(Opuntia phaeacantha)* found in northern Arizona on the Navajo Indian Reservation. This species is predominantly yellow but occasionally red or a dusty-rose colored blossoms brighten up the high desert country.

PALO AMARILLO
FREMONT'S BARBERRY
BARBERRY FAMILY

Berberis fremontii Torr.
Berberdacae

Palo amarillo (literally, yellow wood), is a tall shrub which resembles holly, although it has dark blue berries. It grows on rocky slopes such as those between Cerillos and Golden, in New Mexico.

Nearly any older Spanish New Mexican can tell you that the branches and roots are its medicinal parts. The latter are boiled and added to a bath prepared for tubercular patients, who must be treated at least nine or a dozen times before relief may be expected.

The branches may be broken into pieces and also boiled in water for baths to help rheumatism and pains in the ribs. These baths are to be given nocturnally, in sequences of three nights, and a small amount of the liquid should be drunk at the same time. A similar dose is taken for **fiebre amarilla** (jaundice), and since the decoction is a yellow liquid, once again we have a surviving example of the Doctrine of Signatures in New Mexico. Moreover, the **palo amarillo** is a "cold" plant, and should therefore be used in counteracting all kinds of fevers, including malaria.

Holly-like *Berberis fremontii* leaves ½X.

2′ - 6″ branch of *Berberis fremontii.*

In the olden days, two small crosses were made from **palo amarillo** wood and attached to the person by leather thongs. One cross was placed on the chest and the other on the back—this would protect the wearer from being struck by lightning.

Ethnobotanical excerpt from 'Healing Herbs of the Upper Rio Grande'—L. S. M. Curtin, Laboratory of Anthropology, Santa Fe, N.M.

WHY NOT RAISE CHAMAECEREUS SILVESTRII?

By Harold P. Faust, Charlotte, North Carolina

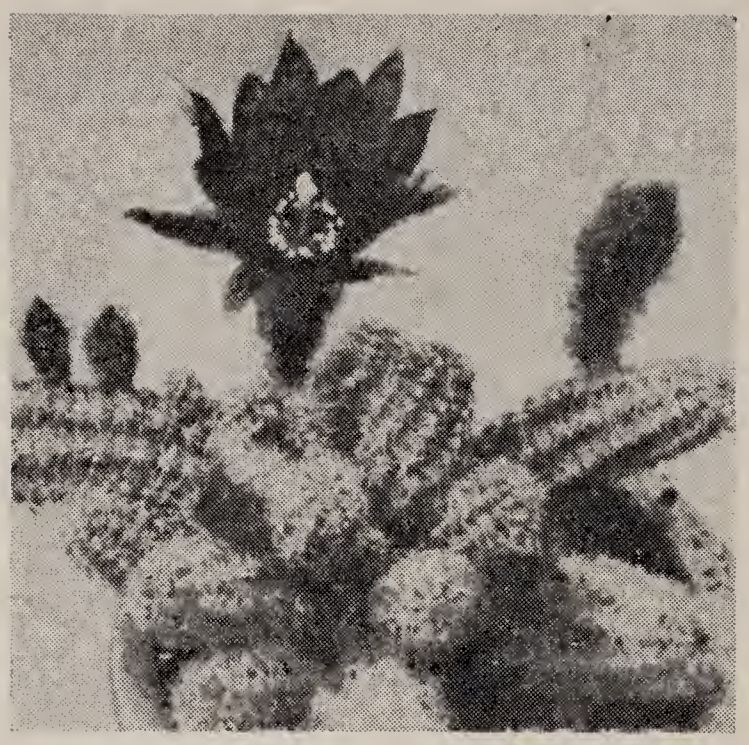
The September issue* broadcast an appeal for the story of a personal hobby, and this is our response. You will have to decide whether it is exciting, but as we see it, any hobby which furnishes relaxation, and an out from the cares of this world, is exciting. The chances are good that you never did raise any, or, if you did, you don't recognize them by this high sounding botanical label. Frankly, we chose it to arouse your curiosity, reading this little story as a result. Here is an interesting hobby, in which you can indulge, with a most modest cash outlay, and certainly a minimum of time, care and attention, considering the reward offered. The price of a few packs of cigarettes, a tin of tobacco, or the cost of a "shot" of spiritus frumenti (medicinal, that is!) will put you in business. From then on, whether you reside in a locality blessed with year round outdoor growing conditions, or are limited to a window garden in some snug little snow covered cottage in Maine, your interest, pleasure and rewards are assured. Pray, read on.

To return to our title, this is the botanical name assigned to a small plant, normally about 4 to 5 inches in height, which is only one of well over 2,000 species of cacti (plural of cactus). It is more commonly known as the "Peanut Cactus," because of its similarity in shape to the well known "goober." Now please don't make a snap decision, and

A 12″ pot of peanut-cactus.

say that these interesting plants are just too ugly to be fascinating, or exciting to you! It is again quite possible that you have never seen one of these in bloom. Nature, and He who controls her, has gone all out to compensate for the drab appearance of the plant, by furnishing blooms that can be compared in beauty, to any you have ever seen! This little "Peanut Cactus" will, with proper care, reward you with flowers that are bright scarlet in color, and, without doubt, exciting to behold. There is that personal satisfaction in raising one of these to

* FIFTY-PLUS Magazine.



Peanut-cactus in bloom.

the flowering stage that is any true devotee's sufficient reward. You will probably spend hours in telling your friends all about it, as you proudly exhibit "goober in full bloom"! I earnestly urge you to consider this hobby, regardless of your geographical location. It can be accomplished equally as well, indoors or out, from the "far north" to the "deep south," and from east to west.

If your interest is now aroused to the point where you would like to know a bit more about it, and what it can offer as a hobby, please get out your loose change, and see if you can come up with 85 cents. Got it? Good! Here's what to do. Send 60 cents to THE DESERT BOTANICAL GARDENS, P.O. BOX 547, TEMPE, ARIZONA, and request a copy of their booklet entitled "CACTUS & SUCCULENTS, HOW TO GROW THEM," and ask them to include a copy of their price list, showing other publications, boxed cacti assortments, seeds, and other items which they offer. You will be well pleased. You should have 25 cents remaining. Send this to Mr. Harry Johnson at JOHNSON CACTUS GARDENS, PARAMOUNT, CALIFORNIA, and ask him for a copy of his 1961 catalogue. The illustrations, many in full color, will be a revelation to you, and I guarantee that you will be surprised at the beauty of what you may have always considered an ugly plant. If you do this, I feel quite sure that you will become interested, if you enjoy the thrill of growing things.

Display case of Hopi Kachina Dolls in Visitor's Building.

GARDEN IMPROVEMENTS

Garden path, adjacent to Webster Auditorium, that was last widened in 1948.

Same path widened and black-topped during the past summer. The rocks, bordering the beds, have all been cemented into place.

CHOLLA, THE HITCH HIKER

Please, Mister, let me go with you,
That is, if you're not in great haste;
Let me hitch a hike on your clothes
As you roam 'bout the desert waste.

I promise that I will behave,
If you'll just leave me all alone;
Let me just hitch a hike with you
For I've no power of my own.

It's tiresome to be just growing
In one place on this desert land;
I'll not be a burden to you
And will not even hold your hand.

We are glad to have you with us,
And please be careful as you go
Along the thorny cactus trails;
But please, Mister, hitch me with you!

—From THE ECHOES OF CACTUS LAND

Chris Lao, Scottsdale, Arizona

ACTIVITIES FOR NOVEMBER

2nd—3 P.M. Lecture—Arizona Cacti in Bloom.

7th—8 P.M. CACTOMANIACS meeting. 'Collecting plants in Mexico' —Rod McGill.

8th—3 P.M. Class—Deserts and their plants.

9th—3 P.M. Lecture—Arizona Wildflowers in bloom.

15th—3 P.M. Class—Culture of Desert Plants.

16th—3 P.M. Lecture—Arizona Trees and Shrubs in Bloom.

22nd—3 P.M. Class—Desert Succulent Plants.

23rd—3 P.M. Lecture—Arizona Birds and Animals.

29th—3 P.M. Class—Identification of trees and shrubs.

30th—3 P.M.—Lecture—Arizona Scenics.

The Desert Botanical Garden Book Store

P. O. BOX 547 TEMPE, ARIZONA

PRICE LIST

Prices quoted include mailing in the United States. Add 10% for all foreign orders.

Terms: Check, Draft or Money Order with your order. Please do not request a 'C.O.D.'.

BOOKS FOR THE PLANT ENTHUSIAST

INTRODUCTION TO DESERT PLANTS—Marshall

Desert Botanical Garden Science Bulletin #3. A study outline of the desert plants for the layman and student. 52 pages, 29 illustrations and line-drawings. $1.35

CACTI OF THE SOUTHWEST—Earle

Desert Botanical Garden Science Bulletin #4. A guide to 118 species found between the Sierra Nevada Mts. and the Rio Grande River, each illustrated and described, 114 pages, 120 illustrations. $1.60

SELF CONDUCTED NATURE WALK—Earle

Desert Botanical Garden Science Bulletin #2, 8th revision. A guide to the thousands of plants in the Garden on a self-conducted tour basis. 16 pages, 7 illustrations $0.15

THE FLOWERING CACTUS—R. C. & Claire Proctor, edited by R. Carlson

A handsome book with 80 natural color photos of Cacti and many black & white illustrations. A book that will do credit to your library. Cloth, 9"x12". $7.75

TREES & SHRUBS OF THE SOUTHWEST DESERT—Benson & Darrow

A comprehensive, non technical description of the trees and shrubs. 115 illustrations, 9 in color, 440 pages, cloth. $8.75

CACTI FOR THE AMATEURS—Haselton

An outstanding book with the answers to your questions on cultivation, propagation, etc. 142 pages, 160 illustrations, cloth. $3.85

SUCCULENTS FOR THE AMATEUR—Brown

A beginners book showing 400 kinds of easy to grow succulents other than cactus. 172 pages, 264 photos, cloth. $3.85

CACTUS & SUCCULENTS AND HOW TO GROW THEM—Hazelton

An inexpensive booklet of great help to the beginner. 64 4½"x5½" pages 65 illustrations $0.60

CACTI FROM SEEDS—Lamb

Complete instructions for a fascinating hobby, 66 5"x7½" pages, 25 enlarged photos of seedlings, 2 line drawings, hard cover. $1.40

PRACTICAL GARDENING IN SOUTHERN ARIZONA—Phoenix Garden Center.

This 3rd edition, revised, is a must for those who attempt to grow gardens in desert areas. This book covers all types of floriculture and horticulture with planting guides. The chapter on Desert Gardens was contributed by our Garden. 82 pages. $1.60

THE OBSERVER'S BOOK OF CACTI & OTHER SUCCULENTS—Scott

A good book describing easy to grow plants. 16 color photos, 160 3½"x5½" pages. Cloth. $1.40

EPIPHYLLUM HANDBOOK—Haselton

A fine book on how to grow and flowers these fascinating plants, 170 photos, 11 color plates, cloth. $4.15

GLOSSARY OF SUCCULENT PLANT TERMS—Marshall & Woods

The description and pronunciation of botanical words as applied to cactus and other succulents. 112 7"x10" pages, 300 illustrations. $4.45

WHAT KIND CACTUS IZZAT—Reg Manning

An entertaining, amusing book of cartoons with authentic botanical facts of the desert's strange plants. 10th printing, 108 pages, 107 cartoons, one 2 page map,

paper $1.60

cloth ~~$2.40~~ 2,65

BOOKS OF INTEREST

MEET THE SOUTHWEST DESERT—Welles
An authoritatively written book with 103 excellent photos by Marvin H. Frost, Sr. 96 pages, 1 map, 13 line drawings. $1.10

MAMMALS OF THE SOUTHWEST DESERTS—Olin
65 illustrations by J. Cannon giving descriptions and life habits of 42 most interesting animals of the desert. 112 pages, 1 map. $1.10

POISONOUS DWELLERS OF THE DESERT—Dodge
A valuable handbook on identification, treatment of stings and bites by insects, snakes, etc. 48 pages. 26 photos and illustrations, 1 map. ~~$0.60~~ .70

FLOWERS OF THE SOUTHWEST DESERTS—Dodge & Janish
140 of the outstanding plants of the desert up to 4500' elevation. 112 pages, 100 plates, excellent descriptive text. $1.10

FLOWERS OF THE SOUTHWEST MESAS—Patraw & Janish
More than 140 species of the plateau or mesa country 4500' to 7500' elevation. 112 pages, 100 plates, good descriptive text. $1.10

FLOWERS OF THE SOUTHWEST MOUNTAINS—Arnberger & Janish
Good descriptions of 149 species on 100 plates, 112 pages, all plants above 7000' elevation. $1.10

BIRDS OF THE SOUTHWEST DESERT—Smith
38 birds of the lower Sonoran desert interestingly explained, with line drawings. 70 pages. $2.10

FIELD GUIDE TO WESTERN BIRDS—Peterson
A practical guide to outdoor identification of birds found west of the Rocky Mts. 244 pages, 740 illustrations, many in color. ~~$4~~.5 .10

AMERICAN GARDENS—Frohman & Elliott
A pictorial guide, published Sept. 1960, of gardens open to the public in the U.S.A., 500 illustrations, 100 in color, completely indexed, cloth 7½"x10" $6.20

HIGHWAY OF CANYONS—Kimber
A guide book of interesting canyons along Arizona Highways #89, 52 pages, 150 photographs. $1.10

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160 4"x6" pages, limp cover
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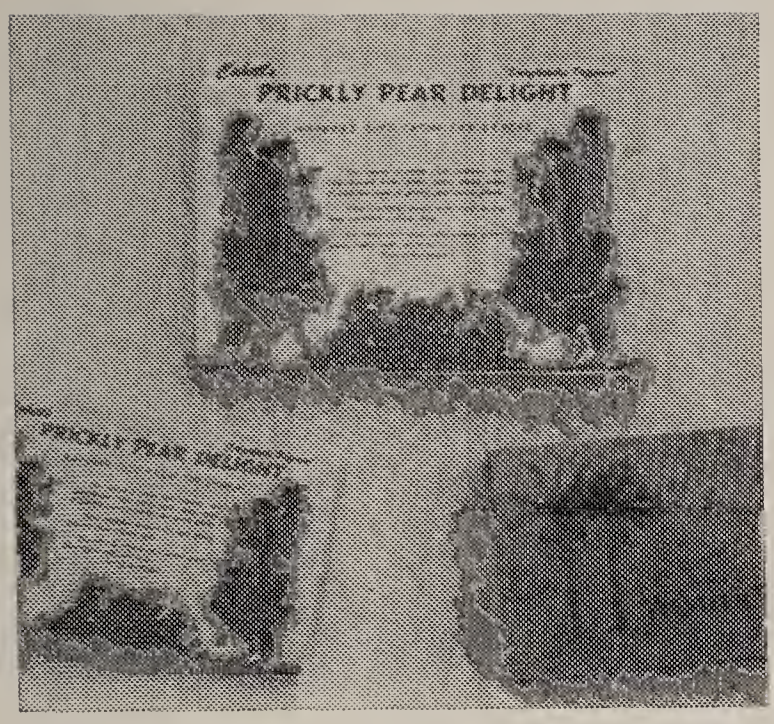
SWEET, TANGY DESERT PRODUCTS

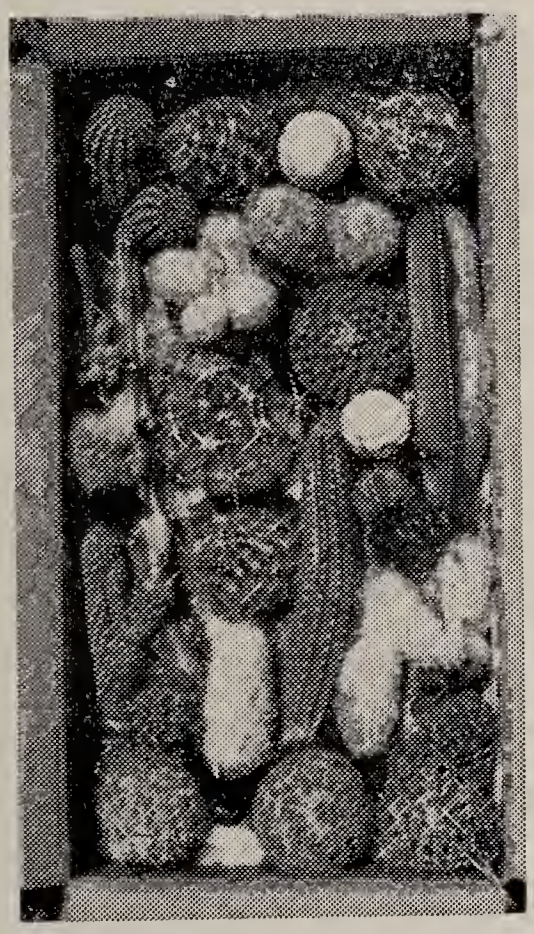
PRICKLY PEAR DELIGHT CANDY. Made from the healthful fruits of the Prickly Pear Cactus.
½ lb. box $1.15 1 lb. box $2.00

WESTERN DELIGHT CANDY. Made of dates, wild oranges, prickly pears and pinon nuts.
½ lb. box $1.15 1 lb. box $2.00

POMEGRANATE JELLY, WILD ORANGE MARMALADE, DATE CONSERVE, PRICKLY PEAR CACTUS JELLY. 4 - 12 oz. jars of the above packed to a box or your select of the above flavors $3.45



FRESH PACKED BOXES OF CACTUS PLANTS



Planting and cultural directions are on each of these boxes of clean, bright cactus. Many of these plants will bloom in the spring. Be sure and let us know if you want either botanical or common names of the plants.

No. 5—	5 different cactus plants	$1.65
No. 10—	10 different cactus plants	$2.85
No. 15—	15 different cactus plants	$4.15
No. 16—	16 large cactus plants	$6.00
No. 24—	24 larger cactus plants	~~$9.50~~ 10,50

—We do not sell individual plants—

CACTUS SEED

ARIZONA MIXTURE—Packet consists of fresh seed of Organ-Pipe, Hedgehog cactus, Barrel, Saguaro, Queen of the Night Cereus and Pin cushion.

MEXICAN MIXTURE—Packet consists of Golden Barrel, Octopus, Bishop's Cap, Organ-Pipe, Hedgehog, Indian-Comb Cereus.

Above packets **$0.50** each

Approximately 250 seeds to a packet.

Culture directions on each packet.

KACHINA DOLLS

These dolls represent the Hopi Gods who came from another world. They are hand carved out of Cottonwood and painted by hand, each being an actual reproduction of old, priceless Kachinas. At the present time about 32 different dolls are being made by Abbot Sakiestewa, a Hopi Indian of Arizona, in the following sizes

3" high	$1.15	4" high	$1.65
5" high	$2.20	6" high	$3.30

A brochure, explaining the Kachina Lore, accompanies each doll.

INCENSE OF THE WEST

The clean, fragrant aroma of smoldering Southwest firewood. Adobe burner and 18 large cones in a gift package **$2.00**
Fragrant JUNIPER or PINON incense 36 cones to a box, **$1.10**

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DESERT BEAUTIES NOTES—12 Florachrome notes and envelopes. **$1.10**
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COVERED WAGONS, individually boxed, as illustrated. A fine gift.
5½"x5½"x4" **$3.35**
8"x7"x4" **$5.50**

SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XV December, 1961 No. 10

A six inch, six month old *Fouquieria splendens* seedling. See page 112.

REG MANNING

SAGUAROLAND BULLETIN

Published and owned by the Arizona Cactus and Native Flora Society, sponsors of the Desert Botanical Garden of Arizona, P.O. Box 547, Tempe. Saguaroland Bulletin attempts to promote the Garden and to provide information on the desert plants and their culture. Subscription $5.00 per year, the subscription including active membership in the Society and the Desert Botanical Garden. Issued 10 times a year.

W. HUBERT EARLE, Editor

Volume XV | December, 1961 | No. 10

Arizona Cactus and Native Flora Society

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GARDEN OPEN DAILY 9 A.M.—5 P.M.
Including Week-ends and Holidays

Feliz Navidad y Feliz y Prospero Ano Nuevo

To all the members of the Garden
From the Official Board, Advisory Board and the Garden Staff

NOTES FROM THE CORNER OF THE EDITOR'S DESK

During the past month we have heard many favorable comments relative to the Garden. These, we would like to pass on to you members:—

"This is the first Garden I've ever visited that unfolds itself in such an easy manner."

"How do you keep the Garden so clean and free of weeds and trash?"

"We are so glad we came. We will test ourselves on what we learned thru that fabulous Self-Conducted Nature Tour. It was worth the trip from San Francisco."

"I never realized that the desert plants could be so beautiful."

"I came for the ride—now I'm so excited about these plants and want to built a garden. Where can I buy a tall Saguaro with several arms?"

"An hour was all I could stay, but I'm coming back for a whole day."

"Why didn't they tell we conventioneers about this Garden? This visit has been the highlight of our trip."

"We've travelled over the country for years and want to tell you that your public rest-rooms are the cleanest we've ever used."

"I think this is one of the prettiest places and it tells you the names of the things."

"We've visited many of the Botanical Gardens in U.S.A. but we can honestly say this is the neatest."

Note found in Guest Book — "I'll never forget the day we got caught in the sticker (prickly-pear) and my sister had to take off her capri pants." Ed. note:— Later we found the discarded apparel behind a bench. Members of the staff had noticed and wondered why this ten year old girl was going thru the Garden wearing a sweater draped around the lower part of her anatomy. Never a dull moment in our Garden!

FOUQUIERIA SPLENDENS

FOUQUIERIACAE
(Candlewood Family)

OCOTILLO

By JOHN WEBER, Horticulturist

10′ tall plant of *Fouquieria splendens*
(Ocotillo) (Coachman's Whip)

DESCRIPTION:

Ocotillo is a spreading thorny shrub resembling an inverted cone with a few to numerous, slender, unbranched stems. The stems measure two to nine meters in length and from two to six centimeters in diameter. Furrows in the grey outer bark often expose layers of the green inner bark. An overall height of six meters may be attained under optimum growth conditions. The vivid green leaves are deciduous during periods of extended drought. These are obovate in shape, rounded at the apex and wedge-shaped at the base. The petiole of the primary leaf hardens into a slender thorn measuring up to 2.5 cm. in length. Secondary leaves are axillary, nearly sessile, and 2.5 cm. in length. Flowering April through June, the clusters are arranged in dense panicles, 10 to 15 cm. long. Flowers are the color of scarlet, brick-red, or occasionally white. These are tubular, to 2.5 cm. in length, and with five-lobed corollas that are recurved. The red stamens are eight to

Scarlet blossom of *Fouquieria splendens.*

twelve and are exerted beyond the tip of the corolla. A capsulate fruit, 16 to 18 mm. long, splits along three or four lines to release the seed. Provided with a membranous wing, the white seed is thinly compressed and capable of being dispersed over a large area by wind.

DISTRIBUTION:

Fouquieria is native in Southwestern United States and in Mexico. In Mexico it is found in the states of Coahuila, Chihuahua, Sonora, and Baja California. From the Colorado and eastern Mohave deserts in California, it extends across Arizona and New Mexico into western Texas. It ranges in Arizona from southern Apache, Coconino, and northern Mohave counties south to Cochise, Santa Cruz, Pima, and Yuma counties. Ocotillo is found growing in south or southwest exposures on dry mesas, hillsides, and rocky or sandy outwash slopes. With an elevational range from sea level to 1800 meters; the plant occupies dry shallow soils that are rocky or sandy. In some localities it is abundant on a limestone substrate. Ocotillo is in common association with Burr-sage (Franseria sp.), Creosote bush (Larrea tridentata), Saguaro (Carnegiea gigantea), and Palo Verde (Cercidium sp.).

Fouquieria is often used as an accent plant when combined with Cacti, Yuccas, and Agaves. It may also enhance a particularly open or barren area if planted as a single specimen plant or in a simple grouping of its own kind. Flowering in Spring and Summer, it is frequently visited by Hummingbirds and other nectar feeders. When cut to desired length, installed in the soil, and watered regularly during the growing season; Ocotillo makes an attractive living fence to encompass yards and enclosures. It creates an effective barrier to retain or exclude animals.

CULTURE:

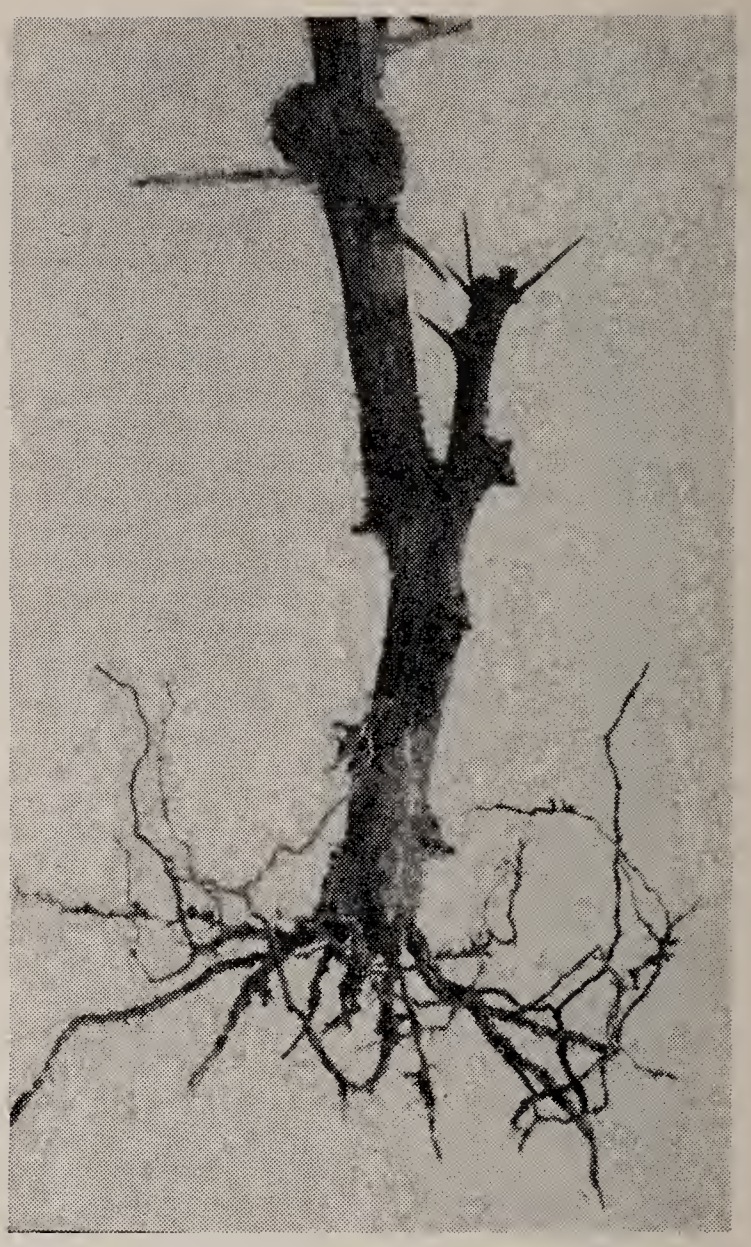
Ocotillo thrives best in a full sun exposure with an adequate area for the top to spread normally. Rocky or sandy well drained soil is most desirable, however, heavier soil may be altered by the inclusion of sand and by providing bottom drainage. In light soils weekly or bi-monthly watering should be applied.

PROPAGATION:

Propagation of Ocotillo is by means of seed or cuttings. Germination of fresh seed is rapid with no pretreatment being necessary. The rate of growth of both seedlings and cuttings is quite slow so that utilization of long cane cuttings provides a quick method of attaining a mature plant. If six or eight cuttings are

Seed capsule and winged seed of *Fouquieria splendens.*

grouped together in a natural arrangement and installed in the soil with light watering during the Summer months, a fully mature plant in appearance will result within several years. Make stem cuts with a sharp knife, dip the cut end in rooting hormone, and plant into containers or directly into the ground as above.



4 month, new root growth of an Ocotillo cutting

AVAILABILITY:

Fouquieria splendens is a stock item in many of the southern California and southwestern Nurseries. A few nurserymen specialize in native plants and use the plant extensively in natural landscapes.

REMARKS:

Palatability for stock and wildlife is considered poor, however, it is known that Bighorn Sheep make moderate use of the flowers and leaves as forage during the spring and early Summer months. California Indians, in an early period, are reported to have used the flowers and pods as a source of food and beverage.

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Lenz, Lee W.—Native Plants for California Deserts.

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PLANT OF THE MONTH

Pink Lily Cactus

Echinopsis multiplex (Lavender trumpet cereus) (Pink Easter Lily Cactus). A free-blooming cereus that produces 6″ long fragrant blooms during the night. It is a native of southern Brazil and makes an excellent house plant producing both flowers and many offsets.

PALO DURO
MOUNTAIN MAHOGANY
HARD TACK
ROSE FAMILY

Cerocarpus montanus Raf.

ROSACEAE

Portion of *Cerocarpus betuloides* bush.

Palo duro, meaning hard wood, was given its Spanish name because of the extreme toughness of the trunks and branches, whereas its botanical name, taken from a combination of two Greek words, **kerkos**, tail, and **karpos**, fruit, was applied because the ripe seeds possess an airy, feathery tail that shimmers in the autumn sunlight and catches the eye with reflected brilliance. Although true mahogany reaches a much greater height, the wood of the **palo duro** has a bright red color when freshly cut, and as it grows on bleak rocky slopes and hillsides, those of English stock have called it mountain mahogany.

Tail-like seed of *Cerocarpus betuloides*.

At first glnace, it seems far-fetched to include this tree in the rose family, but closer acquaintance with its very modest inconspicuous blossoms will convince you that there has been no bo-

A 10″ branch, showing the thick 1″ long, evergreen leaves of *Cerocarpus betuloides.*

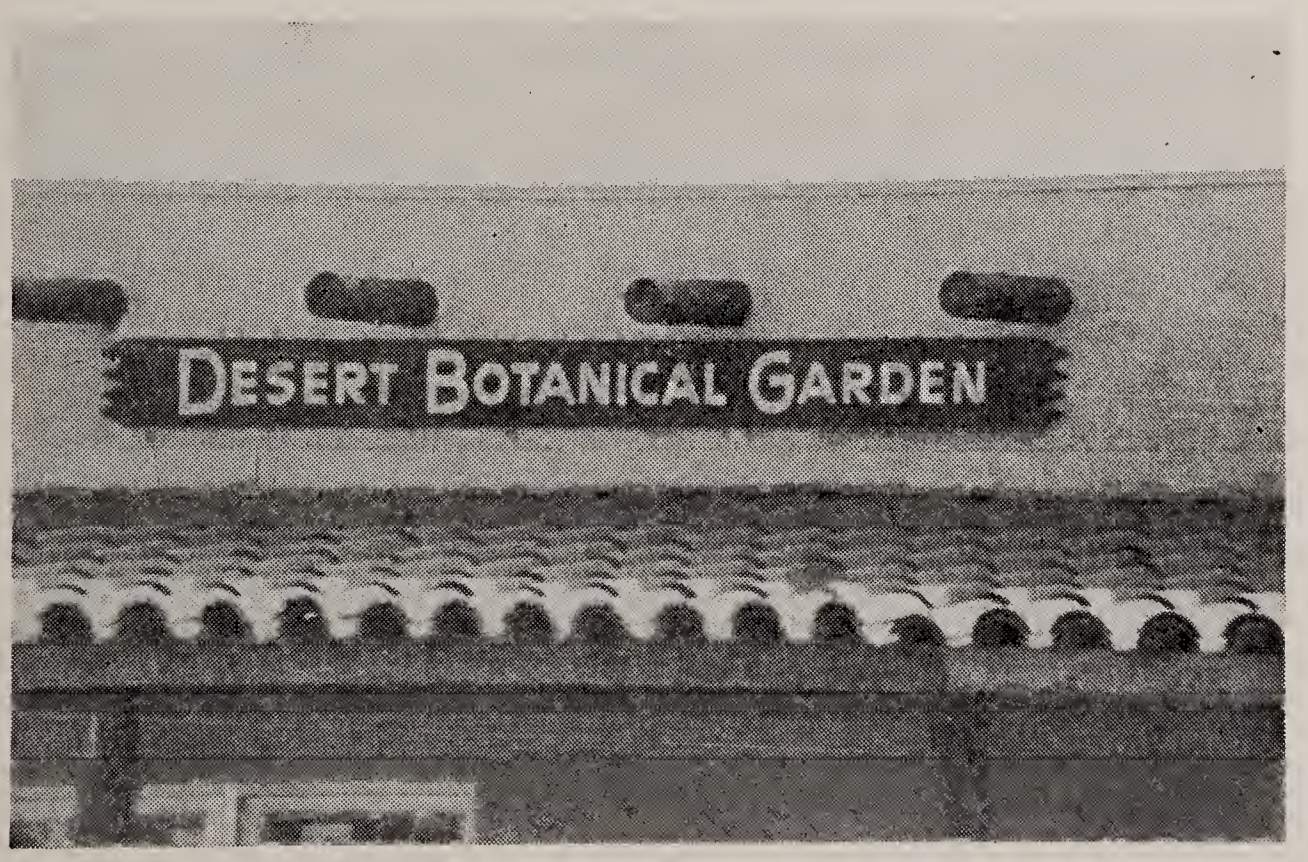
tanical stretch of the imagination in placing it within that group.

The Spanish New Mexicans hang the leafy mountain mahogany twigs around their beds to keep away bedbugs, or dry them, and put them in little bags which are inserted under mattresses for the same purpose.

The Tewa Indians have found that if they powder the entire young plant by pounding, and stir it in cold water, the liquid forms a good laxative.

On the other hand, the Navajos use it in preparing a reddish dye for their wool. This is produced by mixing a decoction of the mountain mahogany with the powdered bark of the alder (Alnus tenuifolia), and with cedar ashes (Juniperus monosperma). Instead of this concoction, the New Mexican Spanish prefer a mixture of the bark of the tag alder (Alnus icana), with the root bark of mountain mahogany and red ocher, for tinting hides, and making a pigment for their paint.

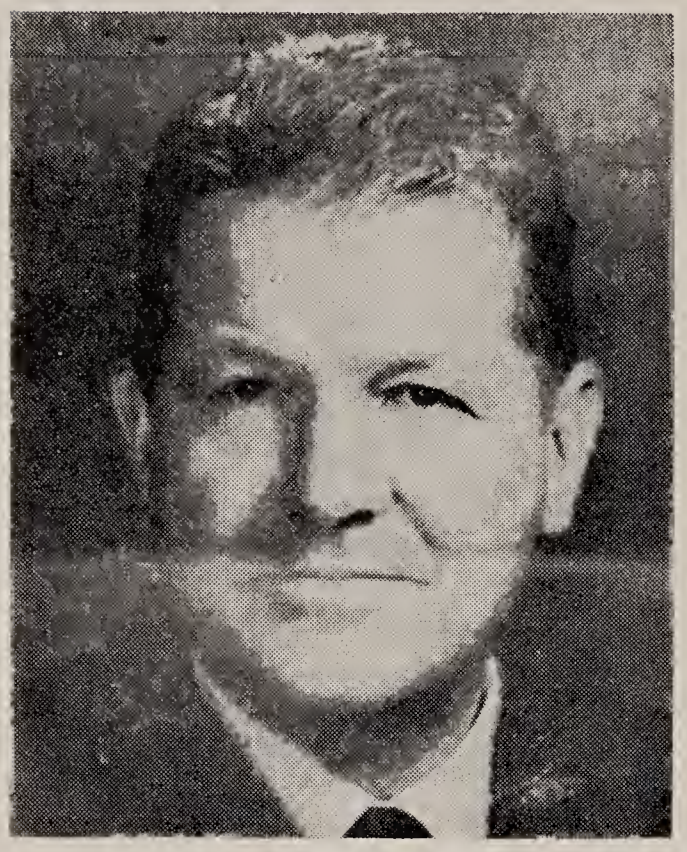
Ethnobotanical excerpt from 'Healing Herbs of the Upper Rio Grande.'—L. S. M. Curtin, Laboratory of Anthropology, Santa Fe, N. M.



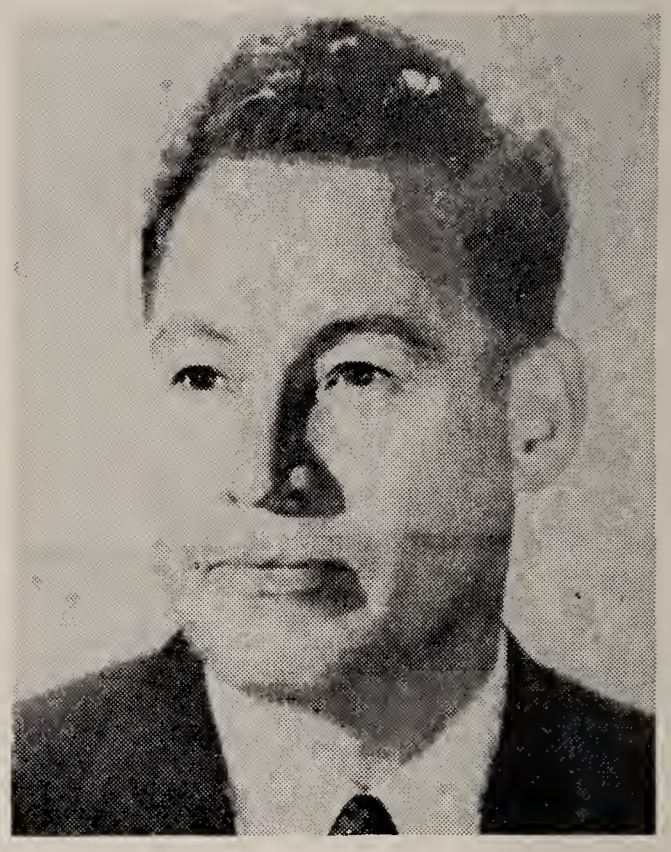
New 12′ long and 12″ high sign with incised letters placed over doorway of Visitor's Building.

GOVERNORS DEDICATE PANCHO VILLA STATE PARK

Columbus, N.M.



Governor Edwin L. Mechem,
State of New Mexico



Governor Trofilo Borunda,
State of Chihuahua

Over 2000 persons crowded the small border town of Columbus, N.M., Nov. 18th in a spirit of harmony, brotherhood and international good will to help dedicate the Pancho Villa State Park.

This town was once the scene of gunfire and death as Pancho Villa and his followers attacked the U.S. causing over 200 Mexicans and 17 Americans to lose their lives the morning of March 9th, 1916.

State Senator Ike Smalley, Deming, N.M., introduced the bill in the 1959 New Mexico Legislature and was responsible for boosting and naming the Park.

The New Mexico State Parks Commission built this 12th State Park this year under the direction of Park Supt. E. P. Smith and Ass't. Supt. John L. Dillard. It is attractively landscaped with cacti and yuccas. Many winding roads lead to functional picnic shelters that are available for the folks from both sides of the border.

Merle Tucker, Director of the Dept. of Development, N.M., said this State Park is the 2nd of its kind in the U.S. on an international border. The other being at Bellingham, Wash., which has greatly helped in increasing friendly relations between U.S. & Canada.

Our Garden, through the efforts of Board Member Chas. Meig, has established a large experimental botanical section in the park. All plants are labeled and additional plants will be added in the spring. Research is being made on what plants can withstand the 4200′ elevation and its cool spring winds.

In his dedicatory address Gov. Mechem referred to the Park as "one of the finest developments we can hope to have in this part of the State."

He said there are many things both Americans and Mexicans can do to increase friendship and cultural activities of mutual interest on both sides of the border. "We are here to dedicate this park as a mutual one, one to the other between myself and Gov. Borunda."

Gov. Borunda paid tribute to the New Mexico officials who named the park and said they have been capable of bettering the memory of the violent epics of the past.

He said that sometimes in the past, the name of legendary Pancho Villa has been wanted to be used by some to darken the name of good relations between Mexico and U.S.

This attitude has been bettered, Gov. Borunda said, "because you are men who live and practice Democracy."

The Fort Bliss Army Band of El Paso, Texas, furnished martial music. Marching bands from Ciudad Juarez and Las Palomas also participated. Rodeo, art exhibits and Indian dances rounded out the day's activities.

The next time you are traveling across southern New Mexico, drive down to this interesting park just 32 miles south of Deming.

The Botanical Garden section can be seen located between the Dedication crowd and the Nationals in the foreground. A few of the many plants can be seen. Off in the distance is Mexico.

SCHEDULE OF ACTIVITIES FOR DECEMBER

Dec. 5—Cactomaniacs — Webster Auditorium ..... 8 P.M.
Dec. 6—Class — Survival Plants ..... 3 P.M.
Dec. 7—Illustrated lecture — Succulent Plants ..... 3 P.M.
Dec. 13—Class — Desert Field Trip ..... 9:30 A.M.
Dec. 14—Illustrated Lecture — Collecting Plants in Mexico ..... 3 P.M.
Dec. 20—Class — Desert Field Trip ..... 9:30 A.M.
Dec. 21—Illustrated Lecture — Arizona Cacti in Bloom ..... 3 P.M.
Dec. 28—Illustrated Lecture — Arizona Wildflowers in Bloom ..... 3 P.M.

JANUARY

Jan. 3—Class — Deserts & Their Plants ..... 3 P.M.
Jan. 4—Illustrated Lecture — Arizona Trees & Shrubs in Bloom 3 P.M.
Jan. 9—Cactomoniacs — Webster Auditorium ..... 8 P.M.
Jan. 10—Class — Culture of Desert Plants ..... 3 P.M.
Jan. 11—Illustrated Lecture — Arizona Birds & Animals ..... 3 P.M.
Jan. 17—Class — Desert Succulent Plants ..... 3 P.M.
Jan. 18—Illustrated Lecture — Arizona Scenics ..... 3 P.M.
Jan. 24—Class — Identification of Desert Plants ..... 3 P.M.
Jan. 25—Illustrated Lecture — Succulent Plants ..... 3 P.M.
Jan. 31—Class — Desert Survival Plants ..... 3 P.M.

Idria columnaris Kellogg Living Telegraph Pole Boogum-Tree is a member of the Ocotillo (Fouquieria family) and is found in both Baja, California, and Sonora, Mexico.